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MacAddict

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JANUARY 2001 NO. 53

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**Exposing
Internet Explorer's
Hidden Features**

**Use Old Peripherals
with New Macs**

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Act Like
Mac OS 9**

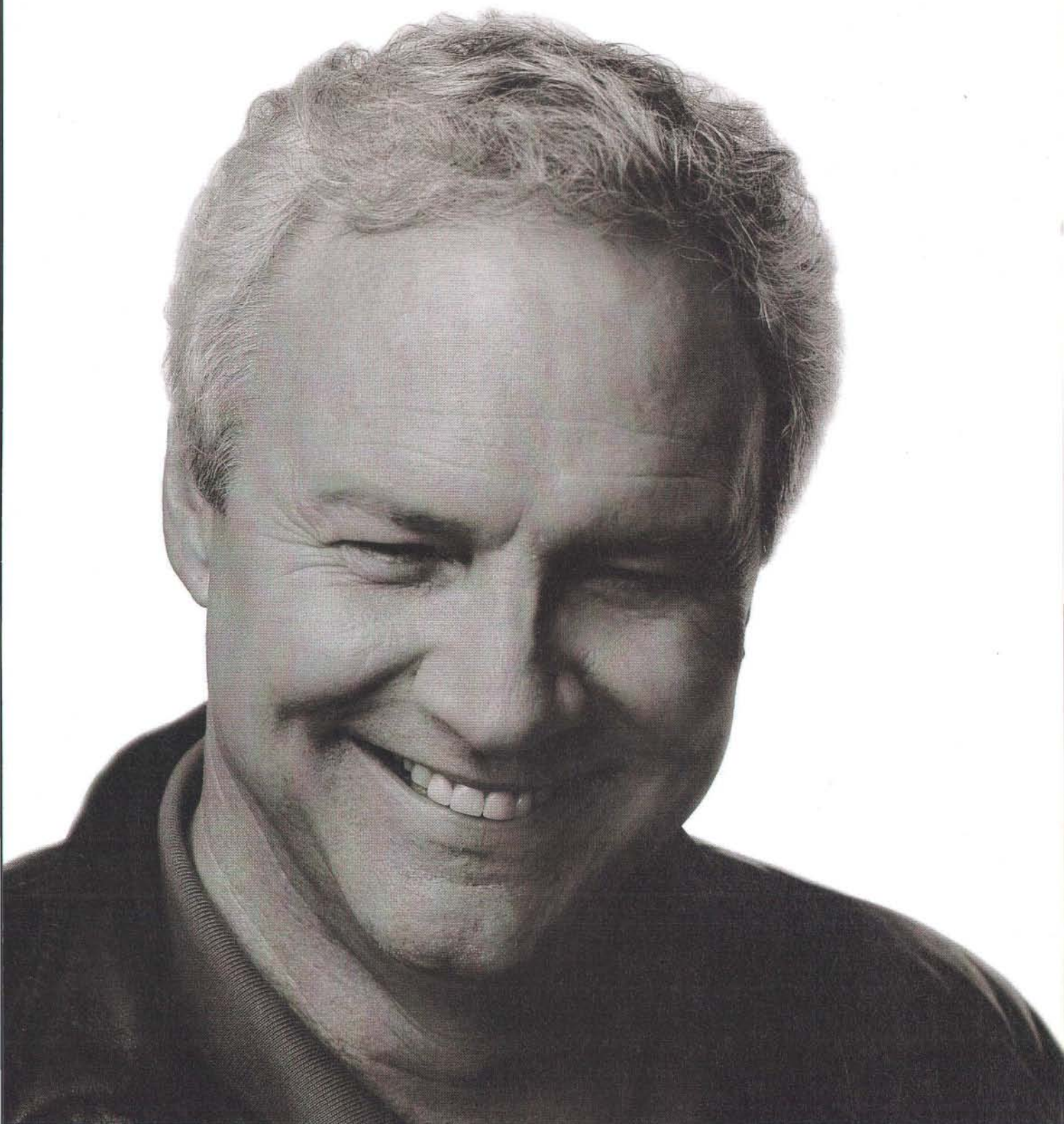
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RIO 600, RADEON FOR MACINTOSH, RISK II

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WITH PASSION

Microsoft **Office:mac** 2001



David

If I had my way, work would be fast. Not furious. And it would be over sooner, so I could get on with the important business of life — having fun. That's why I want **Microsoft Office 2001**. It's faster, smarter, and more fun. Just like me. All the essentials. Made easy. Made for my Mac.

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highlights

24 Look and Feel

Apple's current computers are the most elegant, stunning, beautiful Macs in a 15-year history of elegant, stunning, beautiful Macs. This month we take a unique look at the jaw-dropping power of today's Apple industrial design.

photography by
Stan Musilek

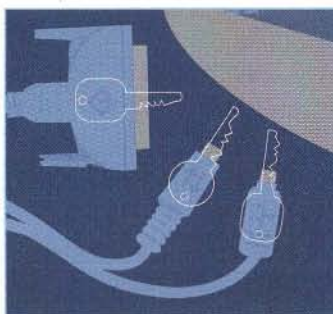


Would you like your breakfast in bed?

36 The Great Migration

So you're slaving over that new multiprocessor G4—but what about that old SCSI scanner and LocalTalk laser printer you want to hang on to? We tell you how to make the leap to the new without leaving behind the old.

by Alan Stafford



Eew, that drive is so SCSI!

42 Portrait of an Artist

As a renowned landscape photographer, Stephen Johnson captures the wonder of nature digitally. Get an up-close and personal look at how his PowerBook G3 plays an integral part in his work.

by Cathy Lu



I think Indy wants his hat back.

Photographer
Stan Musilek
focused on
Apple's new
keyboard and
mouse for
our cover.



how to

74 Find Internet Explorer's Hidden Tricks

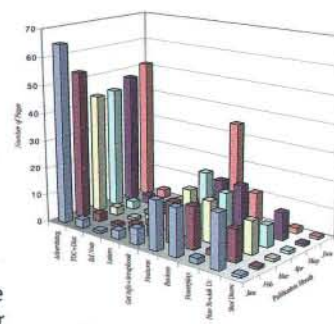
While all the bells, whistles, horns, and sirens Microsoft has added to Internet Explorer may leave you deaf and blind, some of these extras can actually speed up your browsing. **by Joseph O. Holmes**



I see Timmy and Bobby...and Cindy...

78 Make Charts That Don't Suck

See one of our staff members descend into chart madness! Shudder as he waxes eloquent about the difference between line and scatter charts! Run screaming as he ominously describes this as the tip of the iceberg! Realize there's no hope as he starts plotting the number of iceberg-related disasters from 1900 to 2000! **by Ian Sammis**



Charter yourself a clue.

84 Make Mac OS X Look and Act Like Mac OS 9

While we all appreciate the stability and performance even the *beta* of OS X has produced, sometimes we feel like we're drowning in Aqua. To ease our pain, we dug in and managed to platinum-plate X's gumdrops a bit. **by David Reynolds**



We've sunk to a new low—Gumby torture.

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Volume 6, Issue 1

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every month

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Do we get our insights from a crystal ball or a magic eight ball? You be the judge.

10 Letters

We read 'em and weep.

14 Get Info

We give you the lowdown on Apple's recent earnings stumble, preview the QuickTime 5...um...preview, tell you how to make a cheap PC Ethernet card work with your Mac, and tons more.



Look! New Sim furniture!

22 Scrapbook

For your enjoyment, we present a close look at the Mac OS X Public Beta developer's tools, freely downloadable from Apple. These tools are great for hacking in X, even if you're *not* a programmer.

46 Reviews

It's a devilish month in the *Reviews* section as we test out the triple six of Mac apps: Photoshop 6, BBEdit 6, and CodeWarrior Pro 6. On a less ominous note, we also pound on the new iBook SE, ATI Radeon AGP graphics card, Rio 600 MP3 player, Canon ZR10 digital video camera, and 100GB VST FireWire RAID Array. Plus we check out Digi 001/ProTools LE 5.1, and much more.



We looked, no pearl inside.

72 Powerplay

The new gaming season is coming up, and we've got your guide to the hottest titles. We also take a look at Sin, a killer first-person shooter, and—for those who prefer their games with more brain and less brawn—we check out Runestone.



To boldly go where no spoon has gone before.

88 Ask Us

We bring relief to Macs with sleep disorders, password aphasia, and irrational desires for OTATalkServicesLib.

120 Shut Down

So who the hell *did* shoot J.R.? Wait...wrong dream.



Man, there are months when it's good to be a mascot instead of an editor. Bye-bye Balin! We're gonna miss ya.

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Celebrate the New Year with a New Disc

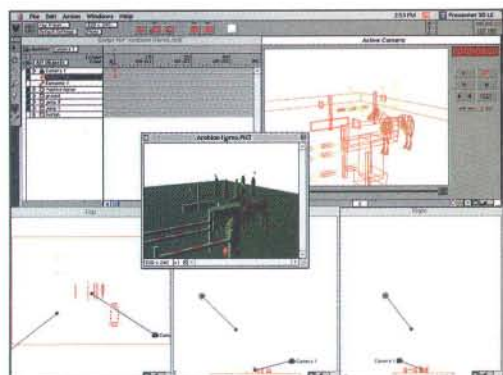
jam-packed for january



You don't have to break the bank to score the big time.



It's the answer for all those adventurous wannabe videographers who are ready to move beyond iMovie's limits.



This simple yet powerful 3D program targets 3D enthusiasts, students, and beginners.

In the 1980s, this game ranked among the best of the shoot-'em-ups, and it's still hella fun.



Igor Engraver 1.1

Any closet composers out there? Have you felt the urge to score the next *Star Wars* movie or arrange the Broadway version of *Saving Private Ryan*, but just didn't have the budget to buy your own notation and scoring program? Fret not! Igor Engraver by Noteheads is not only a full-featured composition and score tool, but also has the most attractive price tag imaginable—it's completely and utterly *free*!

Commotion 3.0 Demo

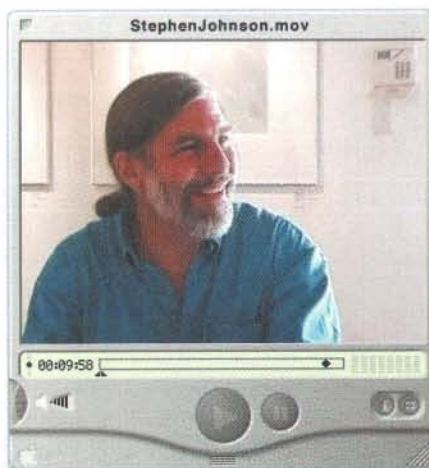
Commotion by Pinnacle Systems is the tool used by folks at ILM and other major movie houses and special effects studios. With this *Freakin' Awesome* workhorse application, you can do what the big boys and girls do—at a fraction of the cost and with twice the ease! Try out the demo included on The Disc and read the review in this issue.

VIDI Lite

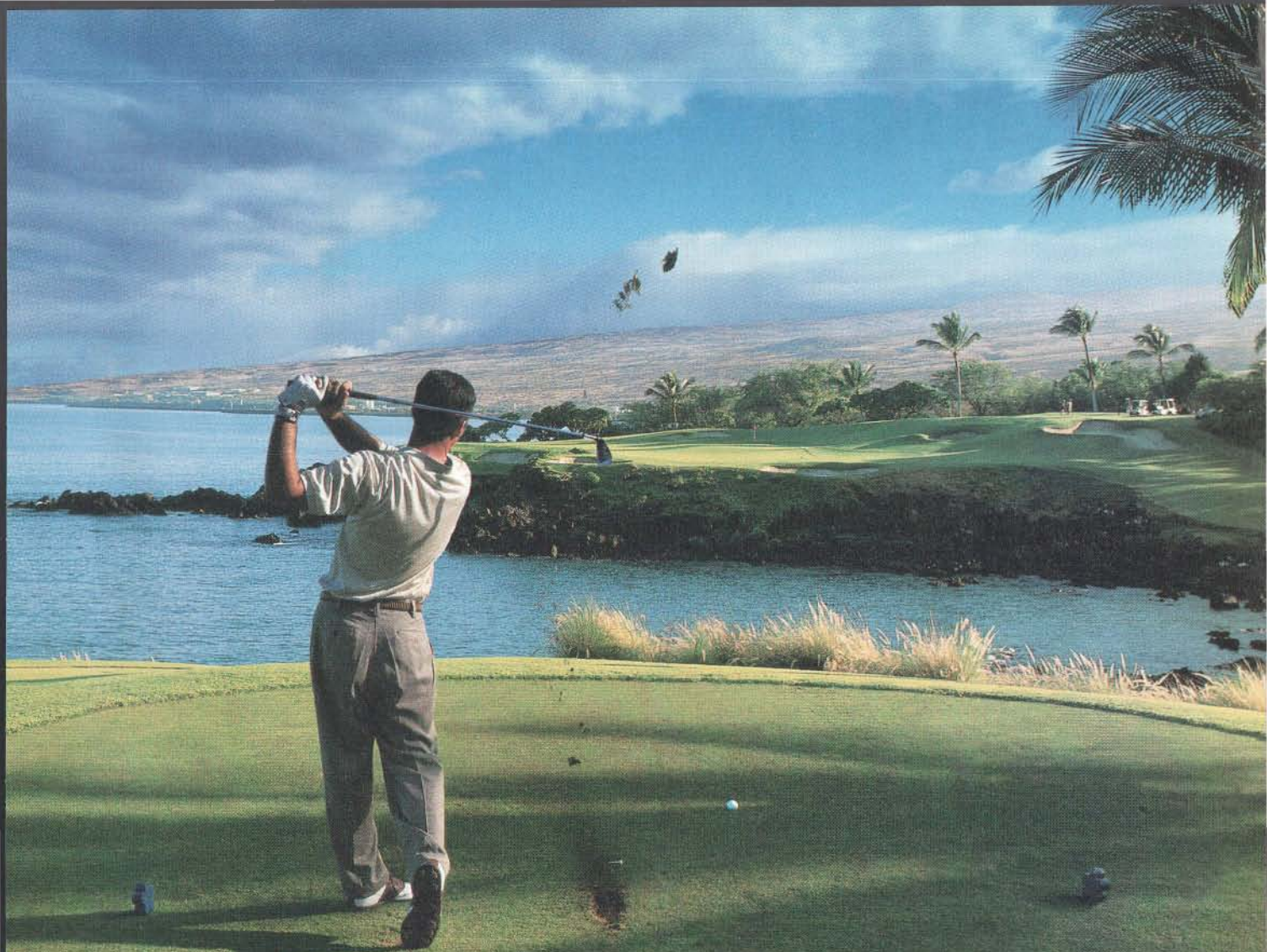
Some of you 3D aficionados may remember the high-end 3D modeling and rendering program, VIDI Presenter and Model. The company is no longer with us, but VIDI's programs live on. In an effort to make 3D modeling and animation grow on the Mac platform, the Mac 3D Team has set up a Web site to accompany VIDI Lite (www.vidi.com/join.html), a free 3D application geared toward beginners and the education market. Let's keep 3D alive on the Mac!

Native Assault 1.2.5

There's a certain charm about those classic coin-op games of the 1980s. *Missile Command* was arguably one of the twitchiest and most nerve-racking of them all. Well, we've flown through the 1990s and dropped right into the new decade—and we're pleased to see the classic game reincarnated as *Native Assault*. The added element of strategy and resource management enhances gameplay—we're not just shooting for a high score this time.



In this month's staff video, Stephen Johnson talks about the amazing potential of digital photography, his own deep-rooted love of nature, and his effort to capture its beauty through digital means.



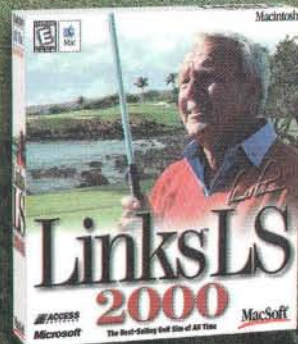
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Fuzzy Zoeller joins Arnold Palmer and three other new golfers



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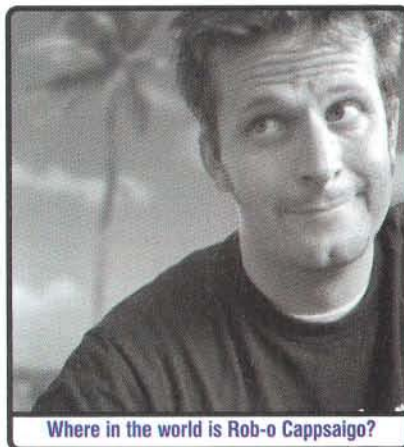
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editor's note

We know everything.

It's that time of year again, folks. Time for roasting chestnuts, putting on big red suits and giving out gifts, lurking beneath mistletoe in search of kisses, and drowning ourselves in eggnog until we think we can tell the future (hiccup). OK, fine—we don't own any chestnuts, red suits, or mistletoe, but we've got that last activity nailed. After many debates, some punching, and one nasty biting incident, we, the *MacAddict* staff, have assembled our yearly predictions. Here's what you can expect from 2001, the real first year of the millennium. Get ready, because you know we're never wrong.

- IBM will challenge Motorola to a fight to the finish over control of the PowerPC. A pair of tigers that Steve Jobs lets into the arena midway through the battle will kill them both. At the Expo keynote, Phil Schiller will subsequently demo which company got eaten faster.
- Parents will rally against the key lime iBook after a series of nasty schoolyard beatings, pants-ings, and wedgy-ings delivered to children toting the bright portable.
- The Apple Mouse will get a scroll wheel, but no second button.
- Jon Rubinstein will give Rob Capps a beating, pants-ing, and wedgy-ing when Rob asks him why the Apple mouse still has no second button.
- Apple will sue several prominent adult-film producers, claiming they disparaged the letter X.
- Video cards will get faster and no one will be able to tell.
- Steve Jobs will throw a hissy fit over whether to name the first OS X update OS X.1 or OS X.1.
- Millions of Mac users will utter the phrase, "So is this booting into Classic now, or did something freeze?"
- In an attempt to make a product as striking as the key lime iBook, Dell will announce a new line of neon PCs dubbed "The Radical."
- Adobe will start bundling computers with Photoshop.
- Amazon.com will stay in business.
- Oni still won't ship.
- Apple will continue to lead the computer world into more and more improbable case designs, leaving everyone ripe for the great "retro back-to-beige" trap the company's planning to spring around 2006.



Where in the world is Rob-o Cappsaigo?

- The iBorg will become fully functional.
- In the interests of strict accuracy, the Western world will relabel the months of September through December as November, December, Undecember, and Dodecember. Conservatives in Congress will filibuster the renaming of February to Bicember and June to Hexember.
- Compaq will team up with Revlon to create Lee Press-On Translucent Panels. Users will swear they "almost look like natural Macs."
- Apple's stock price will gyrate wildly, causing one analyst to switch from the adjective *beleaguered* to *stunning* so many times that his friends check him into a clinic.
- Steve Jobs and Larry Ellison will receive bad press for leaving burning bags filled with dog droppings on Bill Gates's front step, ringing the doorbell, and hiding behind a tree.
- Microsoft's antitrust case will not end.
- Motorola will announce a 2GHz processor at next October's microprocessor forum. The company's representative will leap into a secret escape pod before anyone has a chance to ask when the G4 will finally break 500MHz.
- Jonathan Ive will suffer a nervous breakdown after Steve Jobs asks him to design a translucent, fanless, quad-processor six-slot network server with redundant power supplies that fits into a shoebox.
- Apple, in an attempt to broaden its appeal to the higher-education market, will release its consumer-level symbolic computation package, iMatica.
- We'll see Quad-processor G4s.

Staff Rants

David Reynolds

Executive Editor

Q. What do you predict for *MacAddict* in 2001?

A. After discovering a large monolith on the moon, we'll launch a probe that travels to Jupiter in search of Stanley Kubrick.

Q. If you were to go insane, what type of insanity would it be?

A. I'd like to think I'd be a mumbling, raving lunatic, but I suspect my deep paranoia over browser cookies would just get worse.



Jennifer Morgan

Managing Editor

Q. What do you predict for *MacAddict* in 2001?

A. The entire staff, one by one, will begin intentionally washing their pants in the Hot cycle and drying them on the Sturdy Permapress setting in an effort to look more like Chris Imlay.

Q. If you were to go insane, what type of insanity would it be?

A. I'd strike a mini-xylophone and say in a lilting voice every half-minute, correcting the time as it changes: "At the sound of the tone, the time will be...7:34 and one-half."



Ian Sammis

Associate Editor

Q. What do you predict for *MacAddict* in 2001?

A. I predict that *MacAddict* will get really strange around May as we try to handle the OS X transition.

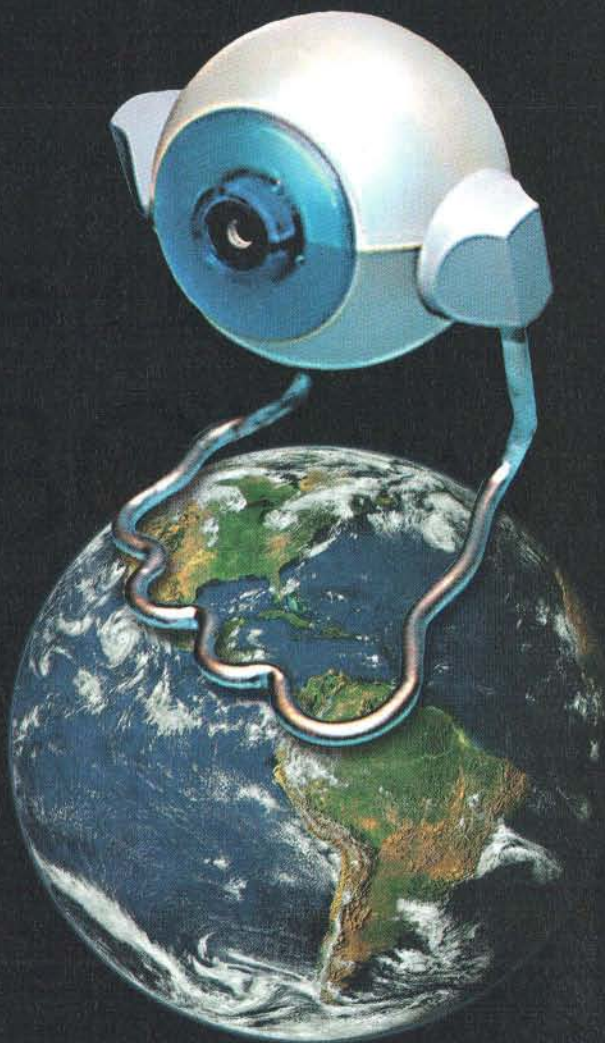
Q. If you were to go insane, what type of insanity would it be?

A. I'd go chart-crazy—I'd just sit at my machine, generating pages and pages of charts that I would insist demonstrated something interesting. If provoked, I'd start fitting random functions to my data set and insist that if the plot didn't convince you, the best fit *really* proved my point.



"HOUSTON..."

"THE iBOT™ HAS LANDED."



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Orange Micro is first to market with the iBOT, a FireWire-based desktop video camera. iBOT harnesses the speed and power of FireWire unmatched by the slower USB-based web cams. In fact, the inexpensive iBOT uses the same IEEE 1394 technology built into pricey DV camcorders costing over 7 times as much. Orange Micro's iBOT is the desktop video camera for the rest of us,

providing crisp, clear video at a price you can afford. (640x480 @ 30 fps)

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Letters

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MOVE TO THE ZOO

I was surprised to learn that Apple does not recommend operation of the G4 Cube below sea level. Inasmuch as the entire city of New Orleans lies below sea level, with the exception of a constructed mound in the middle of the zoo, which I used to ride down on my bike, that limitation will cut seriously into Mac sales in this part of the world.

—Robert L. Cebes

NOW WE FEEL OLD

Hey, I was watching *Dark Angel* on Fox one night, and my dad noticed that when the hacker character opened a list of prison records, the person he was looking for was in cell block G4. Then I noticed the hacker was using a PowerMac G4 keyboard. Coincidence? I think not. I believe we have on our hands a writer who uses a Mac.

Recently Sighted

The ultimate Mac lab accessory—the *MacAddict* minifridge! My boyfriend and I just used creative masking and a few cans of spray paint to create the Happy Mac design.

—Staci Trekles



Bringin' you ice, ice, baby.



There's a Cube on the cacti on the mound in the zoo at the bottom of the sea...

P.S. I'm still working on getting that darned Mac SE open without mauling the poor thing. It's as old as I am, ya know.

—Ryan Wilson (age 16)

YOU'RE THE ONE WHOSE NAME IS STARBUCK

I almost vomited when reading the November 2000 *Letters*. It's bad enough that you chose to print some dittohead's meaningless ramblings, but did you really have to compliment that disgusting, illogical lump of lard, Rush Limbaugh? I think you owe all of your liberal readers an apology.—Walter F. Starbuck

LOVE STINKS

When I met my boyfriend almost two years ago, all he had was a stinking IBM ThinkPad. Since then I have successfully impressed upon him the superiority of the Mac. Yesterday he got a lovely purple iMac DV loaded with all kinds of cool stuff. This is not fair, since I am still using my beloved old Performa 6400. Do you think I should kill him and steal his machine?—Deb Grove
Yes.—Ed.

FLOGGING IS SO 1400S

I think a terrorist from Redmond has infiltrated the *MacAddict* camps. Flipping through the pages of the November issue, I spied on page 4 a full-page ad for Adobe GoLive and LiveMotion. While I was staring at the ad, I noticed that both programs are Windows versions (see the lower-left corner

of each box)! Egads! My favorite Mac-loving magazine has an ad for Windows versions of Web software. Blech! Find the traitor in your midst, and cast him or her away after a good flogging with a new Apple Pro Mouse.

—Chris Rice

WHAT HAVE WE DONE?!

I just wanted to drop you guys a line and say that I truly enjoy doing some of the hardware hacks Ian and Dave accomplish—I've even started my own version of the iBorg using a PowerBook G3/233. I hope they continue to write these how-to articles, as well as the section on getting PC hardware to work with a Mac.—Collin Allen

FOR AN ANARCHICAL APPLE MENU

I just discovered an obscure but previously unknown (to me, anyway) feature of OS 9 (it probably applies to previous versions, too). If you make an alias of a folder or hard drive, put a hyphen (-) in front of its name, and move it to the Apple Menu Items folder, you can't view its contents hierarchically. Remove the hyphen and you can view its contents as usual. I don't know why this is the case or how it's useful, but I felt the need to share it with the Mac community.

—Matthew Raider

THE SAME REASON YOU SHAVED YOURS

Not more than a week had gone by when I received my November copy of *MacAddict*—

a week, that is, since I, too, shaved my goatee. I was struck by the coincidence of the *Editor's Note* caption, which reads, "Rob no longer has hair on his chinny chin chin." I guess this means Rob shaved as well—probably months before I did, knowing the kind of publishing schedule *MacAddict* must have. Still, I can't help wondering why Rob shaved his goatee.—*Jonathan Bare*

THE KEY TO THE CD

I hope my experience will save lots of people a great deal of frustration and confusion when they're installing Office for Mac. The installation process asks for a product code. A slew of numbers appears on the package, but none of them is the one the installer wants, nor are there any instructions on where to find it (other than going to the Microsoft Web site). So here is the clue: On the flip side of the sleeve that holds the program CD, you'll find an orange sticker with a key symbol, the words *CD Key*, and a set of numbers. After you put those numbers into the boxes, the actual serial number (the product code) appears onscreen.—*Raeann Gooch*

DROO, DID YOU WRITE THIS?

There's no digital droo stuff on Napster! The world is ending!—*Macman824@aol.com*

THAT'S A LOT OF COKE

I noticed in your staff video that the soda-vending machine charges only 25 cents. Sweet! I gotta get a job with you guys. My office machine charges 60 cents. Just think how much I could save for that 256MB RAM chip I want on my iBook.—*Adam Codega*

IAN'S QUAKING IN HIS BOOTS

We all know about "Frag the Editors Friday" (what Mac addict doesn't?), but will we ever have a chance to Quake the editors? What about us poor people who have Quake III Arena, but don't want to put up \$50 for Unreal Tourney as well? C'mon! Help a fellow Mac addict who wants to scatter Ian's guts all over the floor without paying for more software. (Sorry, Ian.)—*Brook Willard*
So be it. Keep an eye out for a "Quake the Editors Friday" soon.—Ed.

XCELLENT IDEA

It would be nice if the *Requirements* listings in the *MacAddict Reviews* section included whether an application meets Classic, Carbon, and Cocoa guidelines.—*John Kryst*

FRIENDS ARE EPHEMERAL

My friends all have PCs, and they're all online playing Half-Life Counter-Strike. They've

formed a clan, and now I feel really left out.

Should I buy a PC, or look for new friends?—*Patrick Stevens*

HAPPY NOW?

Have you ever noticed that *MacAddict* reviews go one of two ways? If a company puts an advertisement for its product in the magazine, a favorable review always follows, no matter what the product actually does. If a company does not advertise, the product usually doesn't get a review at all, or gets totally slaughtered. This is biased journalism—the bias works in favor of the people who give you money. I work at a newspaper, and we publish every letter to the editor we receive. If there isn't enough room, we try to balance out the good and the bad. Have you ever noticed that you never publish negative letters?—*Andrew McVinnie*
We write and edit the *MacAddict Reviews* section before we even know which companies are advertising in the magazine. The *Reviews* section is in no way influenced by advertising.—Ed.

BETTER OFF DEAD

Well, I did my own Sims experiment. My warped family consisted of Twisted (a guy), Funky (a girl), Goofy (a guy), and Speedy (a child). I made a house with four beds, a fridge, a counter, a toilet and shower, a table, and four chairs. First Funky found a job as a mascot, but she got fired three days later. Then Speedy went to military school after playing hookie. Then Twisted and Funky grew to hate each other so much that Twisted left. After Goofy and Funky ran out of money, I sold the fridge and the toilet. Then Goofy died. I sold his bed and scraped up enough money to buy a grill. The first time Funky used it, she burnt down the house and died, too.

—*Cameron Sullivan*

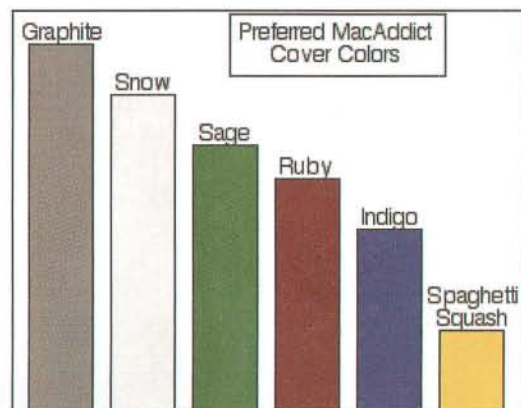
WE'RE KLEEN OUT OF EXCUSES

I was really surprised to see that the list of "Top 5 Things the G4 Cube Is Mistaken For" did not contain what I considered the most obvious choice: a tissue box.

How many times have I seen a square Kleenex box atop a counter? A toilet tank? In the back of a car? How did this obvious resemblance manage to escape your list?
—*Jim Charles*

YOU'RE SQUASHING OUR EGO

The October and November issues both sported a yucky yellow-orange color scheme. You didn't release either one



You forgot to mention cauliflower beige.

anywhere near Halloween. My research indicates that *MacAddict* readers would much rather see the depiction of Apple-related colors on the cover of this grand publication. There's a reason Apple designers didn't venture into vegetable themes.—*Dan Craven*

AND NANCY SINATRA WROTE THAT BOOTS SONG, RIGHT?

I just read "Songs Rejected for New iMac Commercials" (*Shut Down*, Nov/00, p120) and saw that you credited the classic Procol Harum tune "A Whiter Shade of Pale" to Annie Lennox. That's tantamount to crediting "Mrs. Robinson" to the Lemonheads, or "Sympathy for the Devil" to Natalie Merchant. Woo woo! Co coo ca-choo!

—*David Baker*

IT'S TIME TO MOVE ON

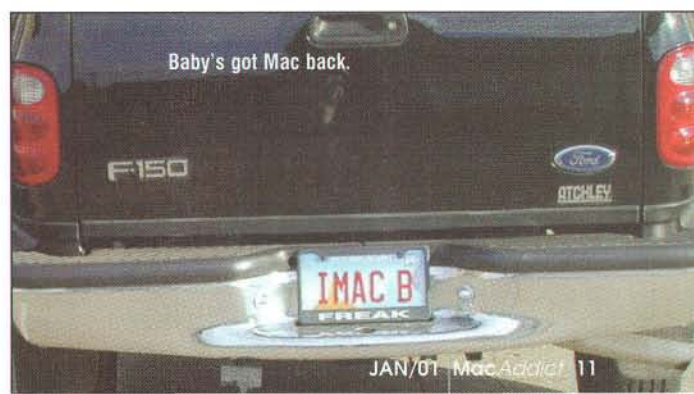
I miss Kathy Tafel. And Wade. And Nikki. And Kris.—*B.J. Gatten*

THIS IS NOT A COMPLIMENT

First, let me say that I'm going insane. I like your magazine so much that it has driven me into a state of mental craziness. Every day I think about the magazine. It's hoo hoo funny, hee informative, and hooheehah interesting. Heehohahahawheehoo. Heeheehehoo! Hoohawheeheteetee.—*The Crazy One*

YOUR DERRIERE'S THERE

I would love to see my rear end in your magazine.—*Scott Smith*



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Big problem? No problem!
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Reverse Disasters and Mistakes...Guaranteed!

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Please, don't turn right.

WHAT PARODY?

I'm one of your charter subscribers. I was finishing up my October issue when I got to the *Shut Down* page. I had been thinking that the humor factor had gone downhill over time, but I burst out laughing at the *Mac's Health* cover. I'm a graphic designer at Rodale, publisher of *Men's Health*. You nailed the parody.

By the way, I like the redesign, but I'm not sure about the tiny sans-serif font for the body copy. The leading helps, but it's just too small for comfortable reading. Bump up both the size and the leading half a point, and you'd make me a little happier.

—Judy (no relation to art director David) Ross

SOMETHING'S ASKEW

The following discovery recently came to my attention. CompUSA assigns all its products a six-digit SKU number. Of all the products in the entire Mac section, only three have the numbers "666" appearing in succession in their SKUs. The first product is an obvious one: the hybrid CD for the original *Diablo*—no surprises there. The second two are *Connectix Virtual PC* for *Windows 95* and *98*. Is it just me, or is this too eerie?

—Hyperjon (a CompUSA employee)

BUT STEVE JOBS MAKES \$1

While listening to NPR recently, I heard an interesting story about the biggest names in Silicon Valley and whom they were supporting for president. I was thinking, "Duh, like these dot-com billionaires will give their money to anyone who's not promising them a huge tax cut." Then the program started listing the people who supported Al Gore, and guess who the first one was—

Steve Jobs. It renews one's faith.
—MAtredie@aol.com

TASTELESS

Your picture displaying a use for the puck mouse (*Get Info*, Nov/00, p16) was way uncool to this Black reader of your (usually) fine magazine. It was simply a display of racism and insensitivity. You stooped really low to get a laugh. You didn't get one from me.—Charmaine E. Gordon
We apologize. We did not wish to get a laugh at the expense of anyone's culture. We were mostly amazed at the potential (mis)use of Photoshop.—Ed.

WHAT A TANGLED WEB YOU WEAVE

After waiting almost a month to get my G4 Cube, I had built up a lot of expectations, but I ran across a problem: real bugs in the system. It came with two black beetles (I think they were trying to start a family) and a nice little spider. You thought I meant hardware/software bugs, didn't you? The spider is still in there though. I can't get him out. Maybe I should call Norton, or is that Orkin?—Sam Centellas

You Know You're a Mac Addict When...

...you realize your blood isn't red—it's ruby.—vtwin 0001

...you won't sell an old car because it has your original Apple Computer sticker in the rear window.
—Garth Hansen

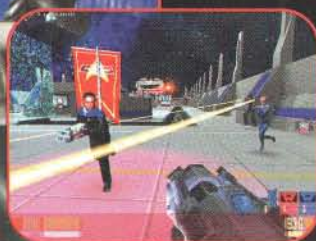
...you change your desktop more often than your underwear.—Anonymous

...drinking Cocoa makes you feel cutting-edge.—Jonathan Claydon

...your last name is Bonde (pronounced Bondi).—William Bonde

...you reach for the Undo button when brushing your hair.
—Benjamin Warren

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Too Many Cubes

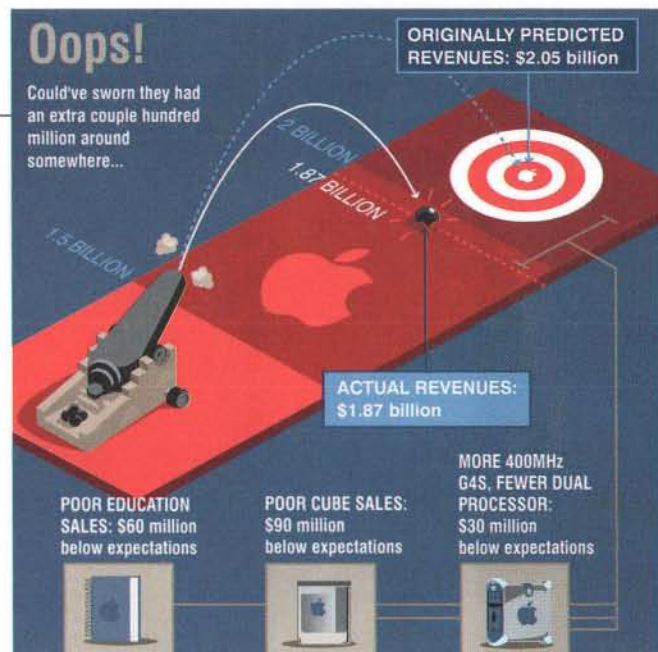
It's Still a Profit, but the Revenue is Small

Folks who invest in Apple (the company itself, not the hardware) haven't been enjoying the end of 2000. After doing better than anyone expected for two solid years, Apple finally reverted to form last October, glutting the channel with an unpopular model and fiddling with its sales methods at the worst possible time. The result was a fourth-quarter net profit of only \$108 million from operations, along with \$47 million from sales of still more of its apparently inexhaustible supply of ARM stock (ARM, the company that made the processors for the Newton, has increased in value about 15 times since its initial public offering back in 1998).

Apple's chief financial officer, Fred Anderson, attributed the teeny-weeny-itsy-bitsy-tiny-lower-than-expected profit to three problems. The biggest was a huge shortfall in Cube sales—Apple sold \$90 million worth of Cubes less than expected. Apple also attempted to change the way it

sells computers to schools just as the schools were attempting to buy computers for the next school year. This rather frustrating tactic didn't go over very well—Apple sold \$60 million less than expected in the education market. Finally, the folks who bought G4s ended up buying far more of the low-end 400MHz models than anticipated, eschewing the more expensive dual-processor options. This lowered Apple's revenues by another \$30 million.

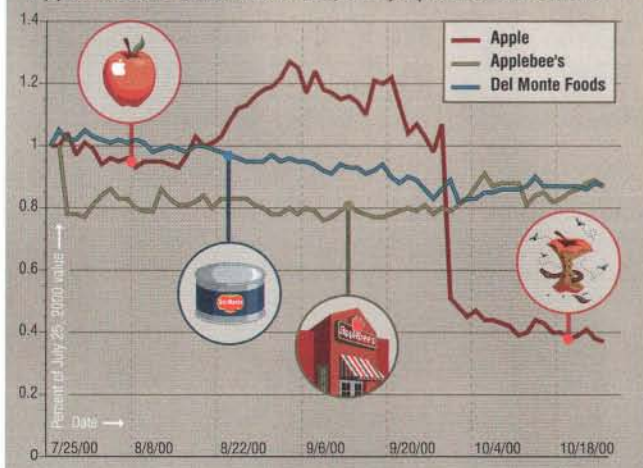
The Cube affair is the most serious of Apple's woes, as that problem didn't end with the quarter. Because the Cubes didn't



Bad to the Core?

Doing an Apples-to-apples comparison

After being forced to read every financial writer's personal favorite "Apple" pun, we thought we'd see how Apple was doing relative to some other apples. Unfortunately, we couldn't find an apple doing worse. Here's how Apple's stock performed compared to Applebee's and Del Monte Foods, a major produce distributor.



sell well, many are still sitting unsold in stores—meaning Apple won't sell nearly so many machines next quarter. That should sound alarmingly familiar to longtime Mac aficionados. A similar problem around Christmas 1995 eventually cost Apple over a billion dollars and led to the familiar news stories that always began with the phrase "Beleaguered Apple Computer..." Fortunately, this time around it won't be so bad, thanks to two of Gil Amelio's enduring legacies.

Apple now has vast cash reserves, and a management sharp enough to nip a situation such as this in the bud. To prevent an unpleasant problem from turning into a total debacle, Apple plans to take the entire hit next quarter—so expect those results to suffer as the company clears out its channel backlog.

The good news is that the disappointing results prompted Steve Jobs to discuss Apple's future far more openly than usual. He acknowledged that the "megahertz gap" is costing Apple sales. The fact that its systems run on 500MHz chips, as opposed to the 1GHz chips on PCs, makes the public view them in a poor light, regardless of the chips' actual performance. He promised to meet with Motorola to try to remedy this situation.

Jobs also announced that Apple plans at least two more iMovie-style applications, and finally revealed how the Mac OS X Public Beta is doing—60,000 copies as of October, with about 500 more sold each day.

Of course, for those of us who suffered through the "you can take my Mac when you pry it..." days, it's hard to feel too unhappy about any quarter in which Apple made a profit and sold over a million Macs. Only two years ago, we would have been ecstatic to see numbers like these.—IS

Sublime QuickTime

Meta-Multimedia Technology Turns 5 in Public Preview

QuickTime—Apple's secret plan to take over the universe—reached version 5 in a public preview released during the annual QuickTime Live conference. The new version of QuickTime is chock-full of new codecs (methods of encoding and decoding images and video). It also includes a brand-new player program that addresses users' criticisms of version 4, and more nifty new features.

The best part of QuickTime 5 is the player. After Apple got a pounding from loyal QuickTime users who hated the QuickTime 4 player, the company took their—er, suggestions to heart and created a new and improved player. It features a volume slider (instead of a dial), a revamped Favorites drawer, better control buttons, and an Aqua-esque set of window widgets.

But it's the technology behind the player that's most impressive. The reason QuickTime 5 will continue to dominate is that it can subsume just about any multimedia format by including that technology in its architecture. QuickTime 5 has a few examples of this approach in its ability to play MPEG 1-encoded content (used most typically by universities and the seedier side of the Internet), as well as ShoutCast MP3 audio streams (popular in Internet-based radio).

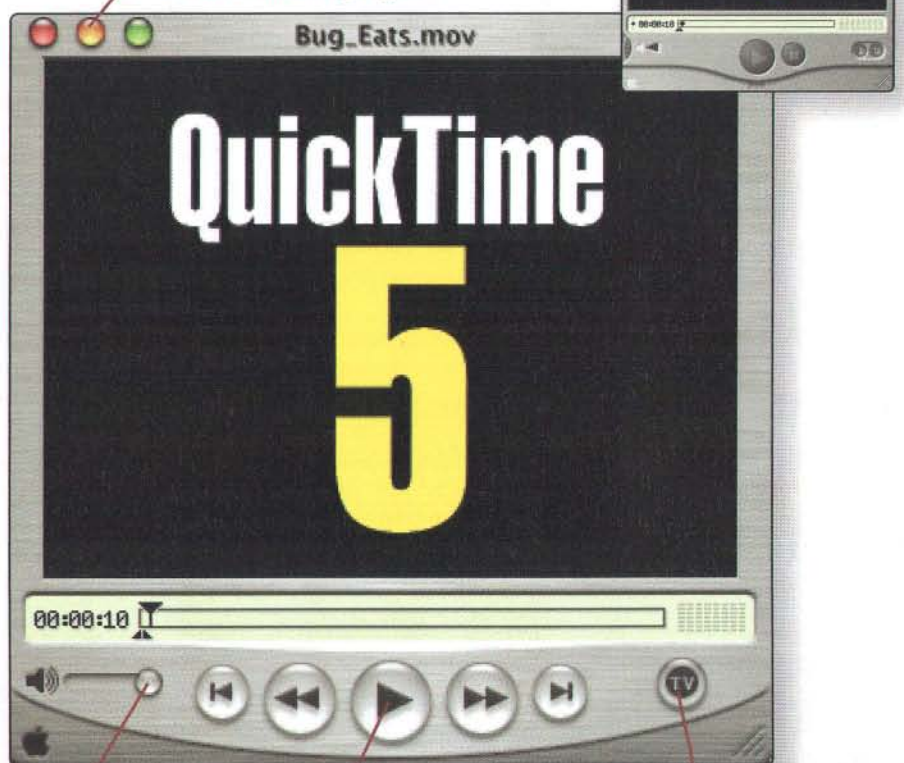
QuickTime 5 also understands Flash 4 content, so you can play the newest Flash-based movies in the QuickTime Player. Finally, the latest release handles cubic QuickTime VR panoramas (meaning you can look up and down as well as around), which are nothing short of spectacular.

Finally QuickTime 5 (when playing a stream from a version 3 QuickTime Streaming Server) has some intelligent caching stuff going on, so viewing that stream should be a smooth ride.

Currently, QuickTime 5 is in preview release and won't be finished until early 2001. In the meantime, Apple plans on releasing a Windows version of the preview so our impoverished cousins can have a multimedia-rich experience, too. Users of the Pro version of QuickTime 3 or 4 can use all of version 5's abilities during the preview period, but when the final version ships, we'll all need to pony up \$29.95 to keep those features. Otherwise, we can play QuickTime content, but we can't use the full spectrum of version 5's abilities.—DR

Apple has listened to the suggestions it received when QuickTime 4 came out. The result is a new QuickTime 5 Player. Here's a look.

Aqua-esque widgets—QuickTime 5 puts Aqua window controls in the QuickTime Player. We haven't yet figured out what the yellow button does. We click it and nothing happens.



Volume slider—It's a slider, not a knob! Finally! This widget will answer the harshest QuickTime 4 critics.

Better buttons—QuickTime 5 Player features five control buttons instead of two, and each has a unique function (the two buttons in QuickTime 4 Player effectively did the same thing).

QuickTime TV—A click of this button brings up the two-tabbed QuickTime TV and Favorites window inside the player's content area. This time it's scrollable, too.

QuickTime Factoids

- QuickTime 5 for the Mac requires System 7.5.5 or later, 32MB of RAM, and a PowerPC processor.
- A Windows version of QuickTime 5 preview will come out in late 2000; the gold master is slated for early 2001.
- A Pro version will be available for \$29.95.
- Those who have the Pro version of QuickTime 3 or 4 will get the Pro version of QuickTime 5 during the public preview, but when the final version comes out, they'll have to pay \$29.95 or stick with the basic version.
- There are more installations of QuickTime in Windows than in the Mac OS.
- Each day, 11 software titles license QuickTime for use.
- The QuickTime Web page on Apple's site is sometimes responsible for more than half of Apple.com's traffic.

droolworthy

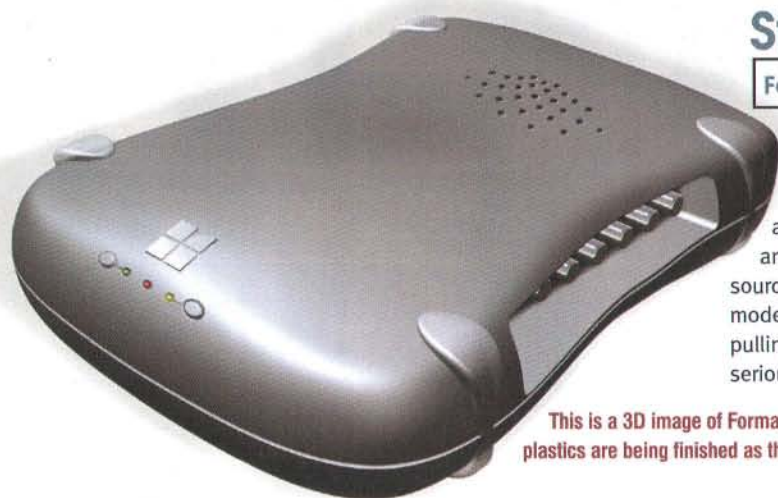
SoundSpace 12

Nakamichi	www.nakamichi.com	\$6,500
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OK, we *know* this isn't exactly a Macintosh product, but it's just so cool-looking, we had to include it here. The SoundSpace 12, from Nakamichi (310-631-2122), features two subwoofers, five speakers, a tuner with AV inputs and outputs that also handles Dolby and DTS audio, and even two remote controls. It has two audio CD drives and a DVD-Video drive for your home theater enjoyment. Want to play Quake III Arena with the *right* kind of audio? Just plug your Mac into this system and get ready to rumble. If you just can't stand not owning one, call Nakamichi and drop some cash. The stand is included.—DR



You'll be the envy of every audio geek out there, but you'll be \$6K lighter.



Studio

Formac	www.formac.com	Less than \$500
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We've been dying to show off this little beauty ever since seeing a prototype this summer at Macworld Expo in New York. The Studio, from Formac (877-436-7622), is a FireWire device that digitizes just about every kind of video and audio feed from any source—including, say, the S-Video source from a DVD player—and it does all this at 30 fps, full-screen mode. The Studio also includes a built-in TV and FM radio tuner for pulling your favorite songs out of the ether. If you're planning to do serious video work, give this hardware a look.—DR

This is a 3D image of Formac Studio—the final plastics are being finished as this is written.

TECHinfoTIDBITS Random Notes from the TIL

This Month, We Bring You Tidbits Related to Mac OS X Public Beta

- An activated Caps Lock key can prevent you from dragging items in a Cocoa application. If you're trying to drag an item such as a Mail message, and it won't budge, press the Caps Lock key to turn it off.
- Although Mac OS X Public Beta works fine with two monitors, its Classic environment can't deal gracefully at all with three or more monitors—it misplaces the menu bar. For now, you'll have to live with one or two monitors; Apple plans to fix this in a future release.
- If you're having trouble launching a program from a Universal Disk Format volume, move it to an HFS+ volume and it should launch fine.
- Disk First Aid 8.5.5 or earlier sometimes reports a MountCheck error when looking at a Mac OS X Public Beta startup disk. When you try to

repair the problem, you find that—although Disk First Aid reports it as fixed—the error persists. This isn't an actual error; rather, it's caused by Disk First Aid's failure to understand some information that Mac OS X Public Beta uses to manage volumes. If you run across other errors, though, you should treat them as such and attempt to fix them using the appropriate utility.

- When you're using the Extensions Manager in the Classic environment, the Restart button doesn't work. If you need to restart the Classic environment after changing its extensions, close the Extensions Manager and choose Restart Classic Environment from the Environment menu.

These tech tips are brought to you from Apple's Tech Info Library. Visit the TIL at <http://til.info.apple.com> for all kinds of great information.—DR

We've Got Your Hub Settings Right Here

A Solution for Those Plagued by Problematic Networking

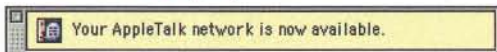
If you've recently replaced an Ethernet hub or two in your network, and you find that newer Macs (such as iMacs and G4s) have trouble accessing the network, we may have a solution—but it requires a little history.

Today's hubs are smart hubs, meaning they're programmable—and that's where the trouble starts. If you program the network switches (or hubs) correctly, the network will work more efficiently, and hence faster. When things go wrong with switches and routers, it almost always comes down to bad network-hardware configuration. This is where newer Macs come in—they face two potential problems in terms of configuring these smart hubs.

The most common hub problem involves autonegotiation. In the past few years, Macs have included Ethernet ports capable of connecting at more than one speed. Modern Macs can talk at 10Mb, 100Mb, and now, with the new gigabit G4s, 1,000Mb speeds. If your network has only 10Mb hubs, then the computers connect to the network at 10Mb. If your network has 100Mb hubs, then your Mac should connect at 100Mb. With the new multispeed switches and hubs, though, it's not so straightforward. The computer and the switch must now negotiate a common speed, as modems do, and this negotiation can cause network problems.

In a dysfunctional situation, you should set the ports on the hub to a fixed speed, one that all the computers connected to that switch can use. For example, if you set a port speed to 100Mb, then a Mac capable of 100Mb will not try to negotiate a speed—it'll just connect at 100Mb, which solves the problem, because the Mac doesn't *have* to negotiate a speed.

A second common hub problem occurs with the activation of Spanning Tree Protocol on the hub's ports. This protocol doesn't work properly with AppleTalk. Unfortunately, network consultants commonly lack training on the Mac platform, and they tend to blame the Mac for *their* lack of understanding. By disabling the autonegotiation and Spanning Tree functions, you have a good chance of making both your hubs and your network function properly.—*Buz Zoller*



This little error notification is the best you can expect with Spanning Tree Protocol enabled. In some cases modern Macs boot too fast for this protocol, so the network doesn't come up until after the Mac has booted.

HACKitIN Making Stuff Work by Any Means Necessary

The D-Link Fast Ethernet Card (DFE530TX+)

The lack of cheap Fast Ethernet cards for the Mac has been a long-time irritant for Mac users. If you've got a beige G3, you can probably remember the sense of frustration you felt after your last trip to CompUSA or Fry's—with row after row of dirt-cheap Fast Ethernet cards and not a Mac driver in sight, it can feel as though those of us from the pre-iMac days never got an invitation to the 100-Mbps party.

We finally couldn't take it anymore (and no one invited us to any other parties, either), so we ran out and bought a D-Link Fast Ethernet card (if you're into product numbers, a DFE530TX+) for just over \$20. A quick trip to D-Link's Web site (www.dlink.com) confirmed that the company doesn't provide Macintosh drivers. Salvation came from the open-source Linux driver that it *does* provide, which came bearing the moniker "rtc8139.c." The rtc stands for RealTek Corporation (www.realtek.com.tw), the manufacturer of the chip upon which the D-Link card is based. A quick trip to RealTek's drivers page confirmed that RealTek at least has no *objection* to gate-crashing Macintosh users; it provides a Mac driver. We downloaded the driver, installed it, and rebooted to find that the driver didn't just work—it worked really well. The Ethernet connection felt fast. If you've got a beige Mac and are looking to upgrade, or if you want to set up a router, the D-Link card might be a great way to go.—*IS*



PHOTOGRAPH BY W.B. JONES



Find Mac drivers for RealTek 8139-based Fast Ethernet cards on The Disc.

It's cheap, it's easy, and it's fast. Hmmm... that doesn't sound quite right somehow.

Search the Entire MacAddict Network

And All from the Convenience of Sherlock

Just because he's an amazing Mac techie and all-around nice guy, Ian Sammis hand-coded 18 Sherlock plug-ins that let you search the entire MacAddict Network of Web sites. These plug-ins cover the current lineup of Web sites in the network, including MacMilitia (www.macmilitia.com), As the Apple Turns (www.appleturns.com), and MacInstruct (www.macinstruct.com). Because sites come and go, the actual lineup of MacAddict Network sites may differ from the ones listed in the Sherlock plug-ins folder, which you can grab from MacAddict.com. You can also grab the plug-ins from The Disc.—*DR*



Find the MacAddict Network plug-ins on The Disc.

Shareware Pick of the Month

Igor Engraver

Price: Free url: www.noteworthy.com

Find Igor Engraver 1.1 on The Disc.

It's not often that a software developer gives away such a full-featured program as Igor Engraver, but NoteHeads software has offered us Mac users a once-in-a-blue-moon deal. This music-scoring program runs for 30 days, at which time you have to register it at the NoteHeads Web site. All that process will cost you is a few TCP/IP packets and a bit of your time.

Igor Engraver is an intelligent score writer for putting your musical fantasies on paper. It features all the tools you'll need to create scores, from MIDI playback (if you happen to have a MIDI rig hooked up to your Mac) to a professional-level notation system, packaged in an easy-to-use interface. But the fun doesn't stop there. With Igor Engraver, you can create cross-platform scores and publish them on the Internet. That way, anyone who downloads NoteHeads Reader (another free program) can read, play, transpose, and buy your Internet-published music. Think of it as the shareware method of selling music.—DR

Although the original score belongs to Bach, you can make it your own with Igor Engraver, a free notation program from NoteHeads software.



Overheard in the Forums

System 7 Is the Death of Apple

We've heard our share of rants regarding why Mac OS X will be the death of the Macintosh, and a few of the MacAddict.com readers seem to agree. They've posted a number of wonderful rant parodies in our forums, and we couldn't resist publishing one.—DR

Forums Member: Kirkgray

I don't understand why Apple insists on forcing us to use System 7. (It's not forcing us? Oh, yeah—new machines like the LC II and IIsi won't even run System 6!) Everything System 7 stands for sucks!

1. The full-time multifinder is just another way to get us to buy more memory. The Mac works best running one app at a time. For anything you really need to do inside an app, you've got desk accessories (or at least you *used* to have them).
2. System 7 is huge—too huge. Again, this is just a way of getting us to buy more hardware—in this case, a hard drive. System 7 won't even run off floppies, as my good old System 6.0.8 will.
3. Color support and color icons are just ridiculous. Mac displays should be black and white—no colors, no shades of

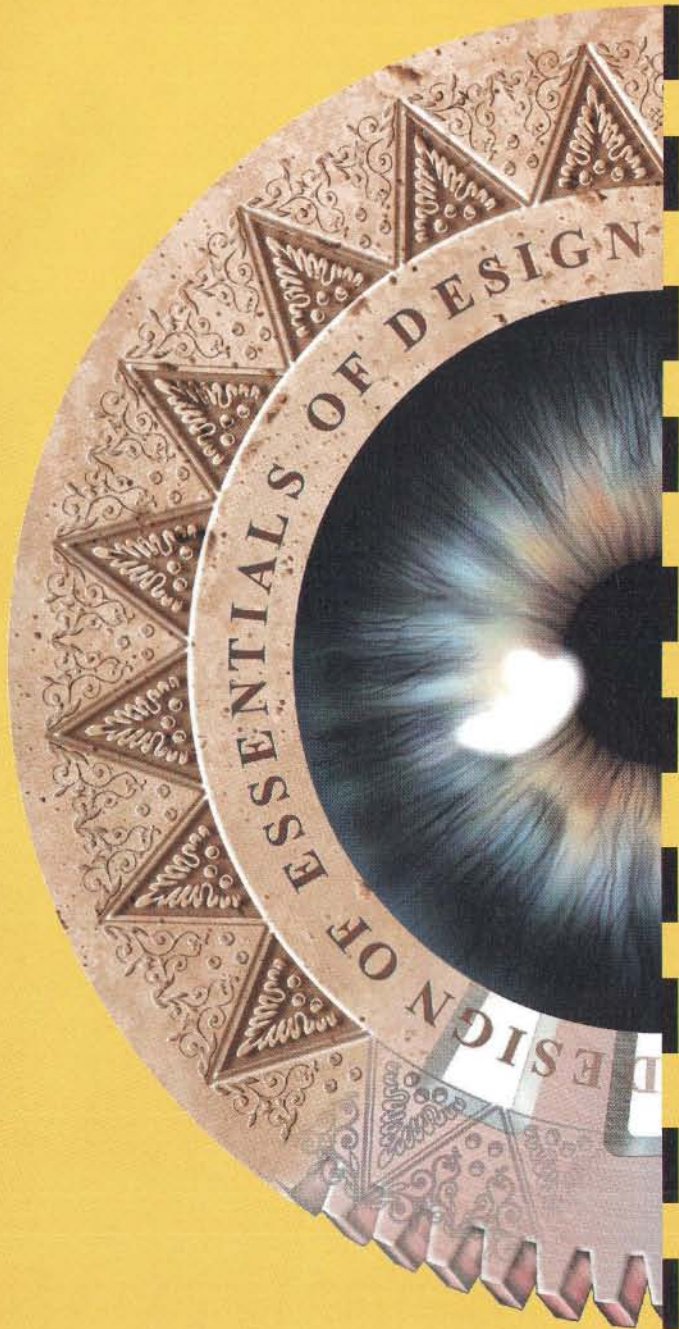
gray—so nothing distracts us from getting our work done.

4. Turning Desk Accessories into mini-apps sucks, too. It's an insult to the original designers of the Mac. These guys were geniuses to make the system see these marvelous little programs as drivers and trick it into running more than one at once—beautiful, elegant, original.

5. Providing HyperCard with the System is stupid. The Mac broke ground as the first computer that ever shipped without a programming language. Supplying one now (even a graphic, object-oriented one) is just giving in to the dark side. I could go on and on... but the fact is I'm too damn angry. The situation sucks. I'm going to get me a 386 and Windows 3.1. Then I'll live in a perfect world.



Illustration never looked so good.



Eye-catching

illustration, isn't it?

And yes, despite the glistening

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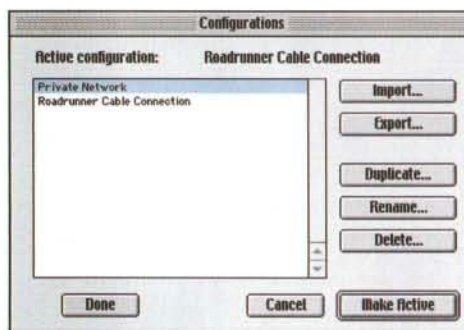
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Fake Your Own TCP/IP Network

The Quick Way to a Home LAN

If you've ever wanted to host a LAN gaming party, or set up a TCP/IP network that doesn't require an Internet connection, check this out.

We've covered this topic before (Dec/99, p48), but just in case you missed it, we'll provide a fresh set of instructions. The easiest way to frag your buddies is to build a private IP network, in which you connect all of the computers (they needn't be Macs) to a single Ethernet hub. IP stands for Internet protocol, the language computers speak on the Net.



The TCP/IP control panel lets you save more than one configuration and switch on the fly. You don't have to restart. Try doing that with Windows.

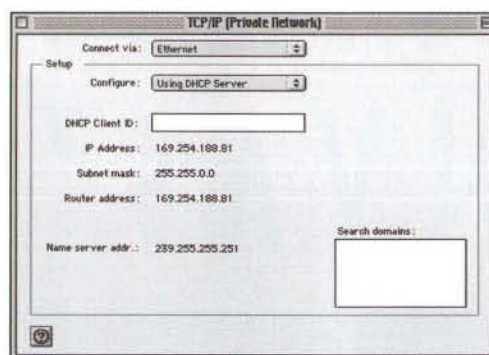
To create the network, connect the computers to the Ethernet hub, then open each Mac's TCP/IP control panel. (PC users will have to fiddle around with the networking control panels.) Since you may already have configured your computer for another connection, such as a dial-up or AOL account, you should probably create a new configuration and save the old one for future use. Select Configurations from the File menu and duplicate your current configuration. Rename the copy as you like, then click the Make Active button to enable your new configuration.

Back in the TCP/IP main window, choose Via Ethernet from the Connect pull-down menu

and Using DHCP Server from the Configure menu. Close the window and click Save. Now you can launch your game or any Internet application to receive an IP address from a phantom DHCP server. Internet applications won't actually connect to anything since your system's not hooked to the Internet, but your Mac will autoconfigure the TCP/IP settings.

Open your TCP/IP control panel again and view the numbers. Your computer will have filled in the IP address field, the number other users on your private network will use to connect with you. In the configuration we've described, your computer searches the network for a DHCP server so it can assign a valid IP address to that server. When your Mac doesn't find one, the OS assigns a dummy address—this functions perfectly on your private network, but would not work on the real Internet. Setting up all your computers like this allows them to communicate with each other.

You can also reserve sets of IP numbers for private use. Type these numbers into the IP address field in the TCP/IP control panel, and they will function just as the false DHCP numbers do. Private IP numbers are available on Apple's Tech Info Library site (<http://til.info.apple.com/techinfo.nsf/artnum/n32008>). —Buz Zoller



Set up your TCP/IP control panel for a LAN party—use a phantom DHCP server to populate your configuration for a private network.

Profile of a Mac Addict

Jennifer "JenniCam" Ringley

When you enter the home of Jennifer Ringley, the study in contrasts strikes you immediately. The first things you see are the elegant hardwood floors, a blinking Ethernet hub with miles of cable, and an antique curio, which supports an almost innocuous tripod-mounted Web cam. "It's pretty much a geek paradise," she says with a little laugh. (For those who don't know, JenniCam is one of the first full-time Web cameras to chronicle the life of an individual.)

And the star of JenniCam is quite the Mac geek. Though we have to forgive her the TI Basic her parents bought when she was seven, Ringley leapt right in with an Apple IIc and has been a Mac fan ever since. Her current workhorse ("I do everything on my Mac," she told us) is an 8600/300—no G3 upgrade, either. When she's not slaving away on her own site (www.jennicam.org) or on a client's, Jennifer indulges in some recreational photo editing or chats with friends on IRC, unless she's out and about. Otherwise, she kicks back with the TV. "When I want to do something for pleasure, the computer is the last thing I want to be doing," she said.

For more on Jennifer, check out our interview with her in the Real Life Macs section of MacAddict.com. —Rich Pizor



She just wants to make cheese. No, really.

FireWire Firmware Fix

Apple Nudges PowerBooks up to Version 2.7

If you're having problems with your PowerBook's built-in FireWire, this one's a no-brainer. Go to asu.info.apple.com, search for FireWire, and grab the PowerBook Firmware Update 2.7. It fixes those annoying FireWire dropoffs that occasionally afflict PowerBooks, making them every bit as stable as any other FireWire-equipped Macs. Just run the installer, reboot, and keep holding down the Command and Power keys until you hear a long tone. Once your Mac reboots, you'll be in FireWire heaven. —IS



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scrapbook

You ask, and we tear up a Mac-related item for your enjoyment.

Mac OS X Hackers' Tools

by David Reynolds

Apple recently made the Mac OS X developer tools available for download from its site (<http://developer.apple.com>), and they're well worth the

modern wear and tear—especially considering how many of them can alter OS X in useful and interesting ways. Here's a look at some of the apps included with the tool set.

icns Browser

Icon aficionados will appreciate this little program, which understands and displays Mac OS X icns icons.

GrabBag

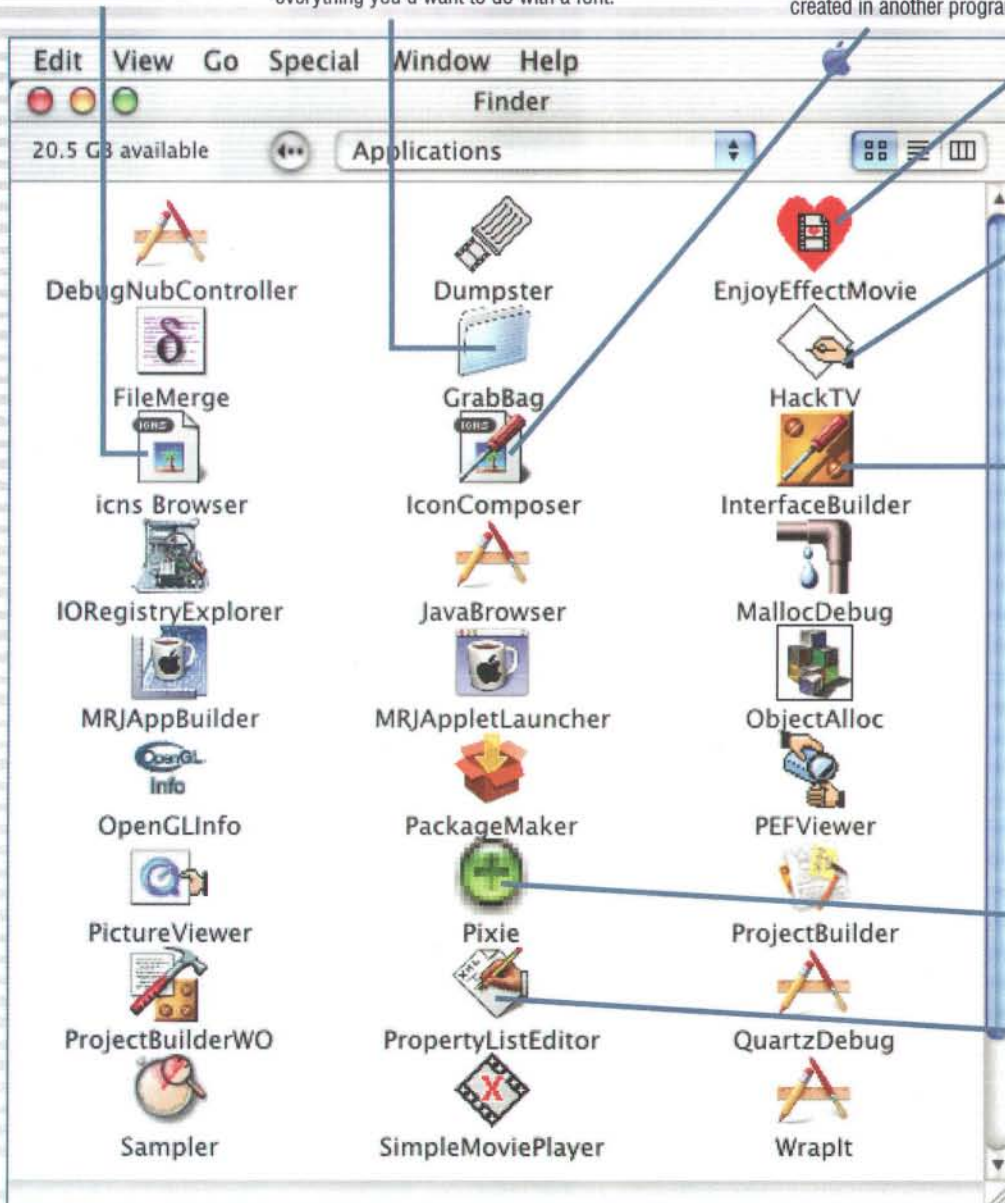
This folder contains two items—Profile First Aid and WorldText. Only the latter is really of interest to mere mortals. WorldText, a full-featured word processor, lets you do strange and amazing things with typefaces via its Typography panel. This program exposes just about everything you'd want to do with a font.

IconComposer

The more able-bodied twin to icns Browser, IconComposer lets you make custom icons by importing graphics you've created in another program.

EnjoyEffectMovie

This tool lets you create and edit QuickTime effects movies. The Fire effect is particularly fun. Heh heh heh fire heh.



HackTV

Brought to a shambling mockery of life by nobody—or so the About dialog box says—HackTV lets you record and manipulate video and audio streams coming into Mac OS X.

InterfaceBuilder

This is the Mac OS X equivalent of ResEdit. With it, you can build the user interface for Carbon and Cocoa applications. You can also use it to open the NIB file of an application, which stores resources, to do your own resource editing. Of course, you'll need the Terminal application to alter the file so InterfaceBuilder can see that NIB file.

Pixie

Reminiscent of the Close View function in earlier versions of Mac OS, Pixie magnifies the pixels underneath the cursor in a small floating window—so you can see just what's going on where you're pointing.

PropertyListEditor

Lets you open and edit XML-based preferences files—a great tool for hackers who want to play with their preferences.



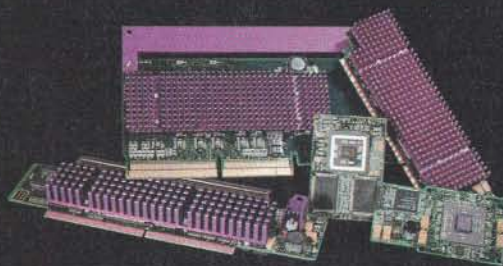
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Look

A visual salute to the boldest, sleekest,

How could a story that starts with two twentysomethings working out of a garage, tampering in a medium as inherently messy and ugly as transistors, conductors, and microchips, result in a design revolution? If you had told a young Steve Jobs that his vision for a *computer* would eventually capture the imagination of the world's most prominent and influential industrial designers, he might not even have believed you. Certainly no one else would have.

Nevertheless, that's how it happened. Today the company that the two Steves founded transforms components as aesthetically unappealing as circuits, keyboards, monitors, peripherals, and cables into products people describe as extraordinary, sexy, luscious, and beautiful. But this design revolution didn't commence with the iMac. In fact, it's been a quest of 20-plus years that started with the first plastic case ever wrapped around a computer. Apple then created the first portable, all-in-one home Mac, and now has gone on to make breakthroughs in color and form—both inside and outside the box. The result? The breathtaking curves, elegant shapes, bold color, and awesome detail of today's Macintosh designs.

Apple rescued the personal computer from the role of electronics geek toy, forced it to become more than a command-line computational tool, and has led almost every major internal and external innovation in the business. Now the same company has transformed the computer into more than a mere box to store underneath your desk. The industrial design team's brilliant innovations have given new life to Apple, the Mac, and the entire PC industry.

To celebrate this achievement, we've assembled a series of unique portraits commemorating these renaissance Macs. Each image showcases Apple's endearing commitment to making products people don't just use, but love.—RC

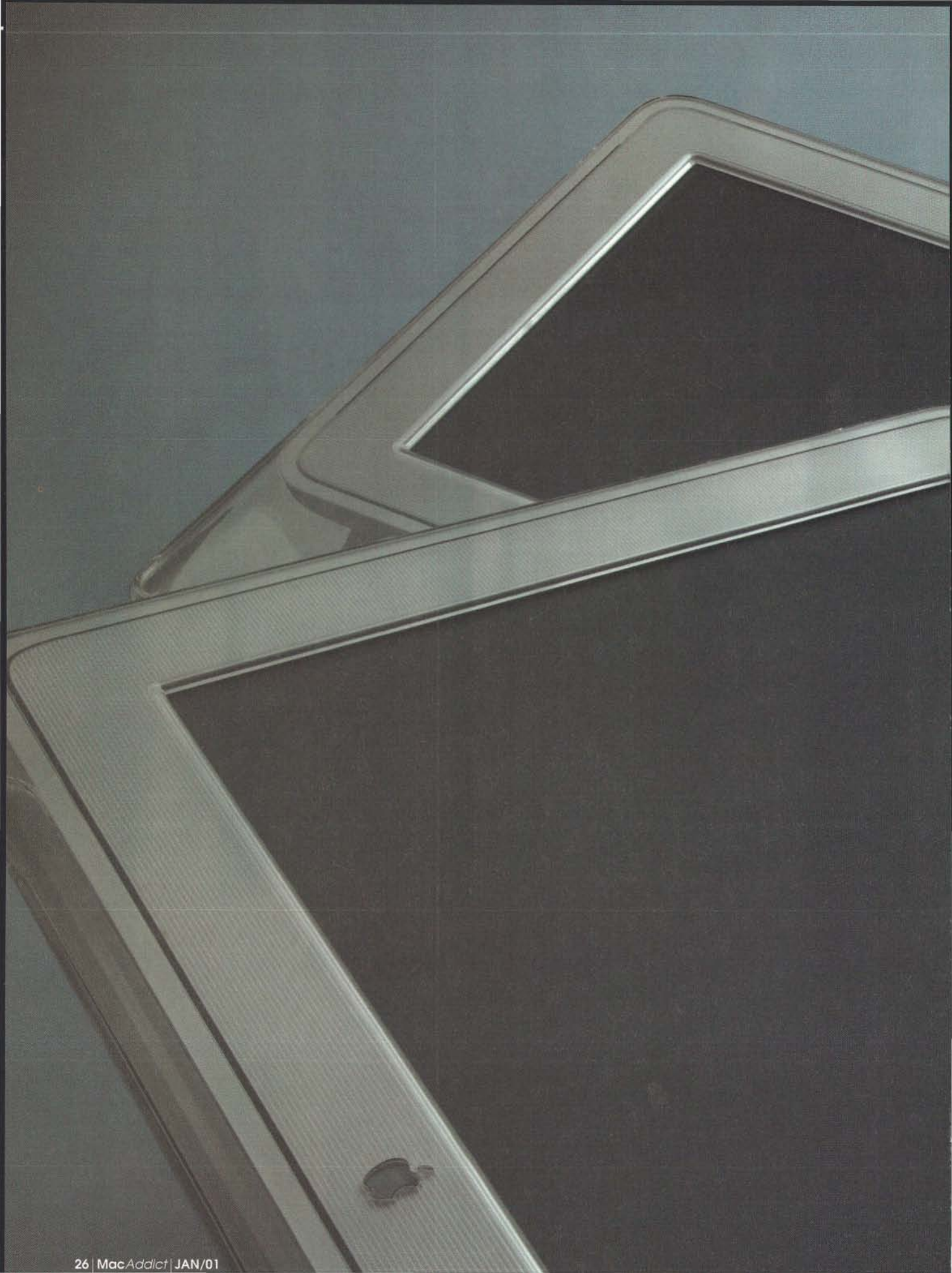


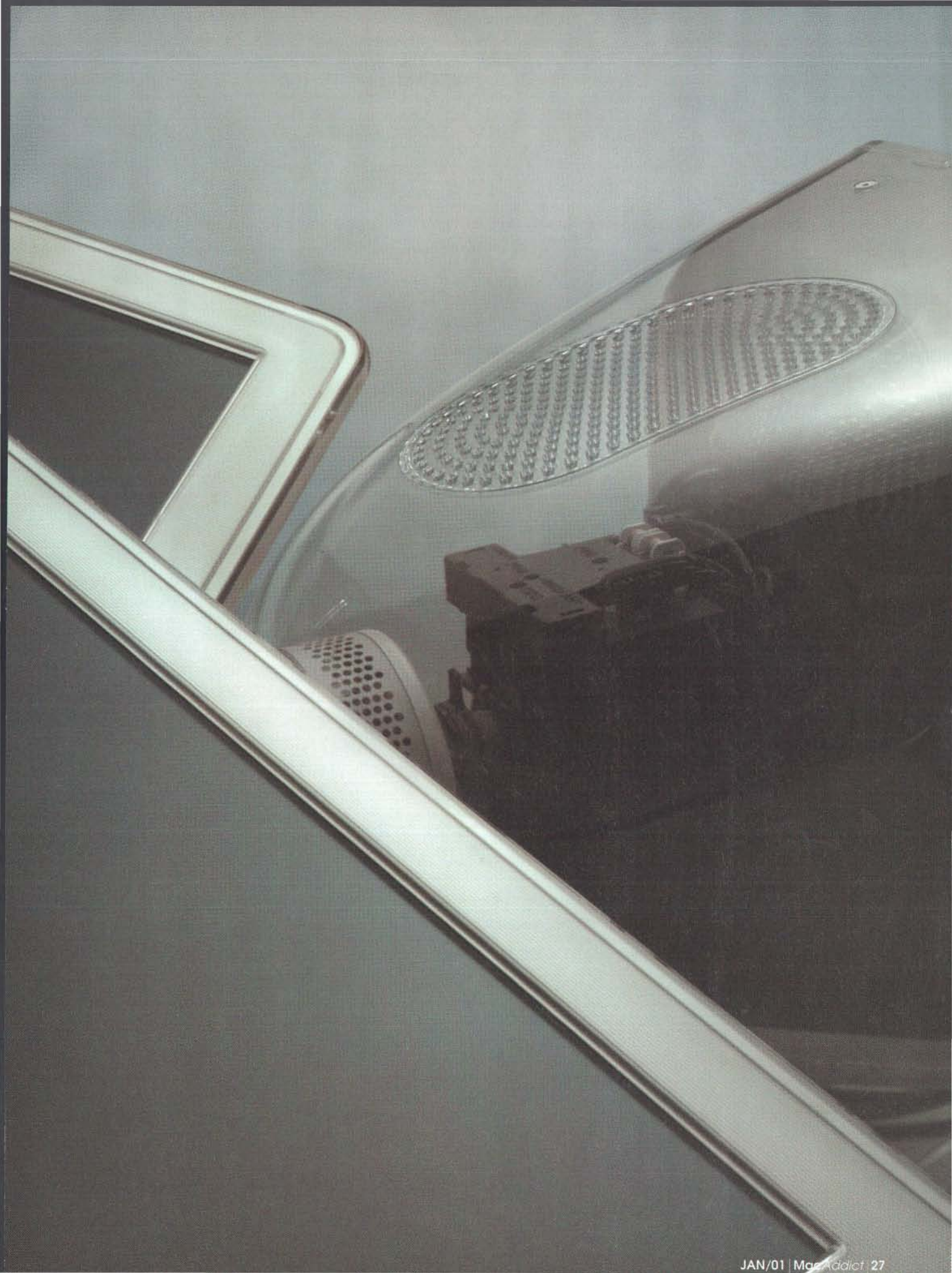
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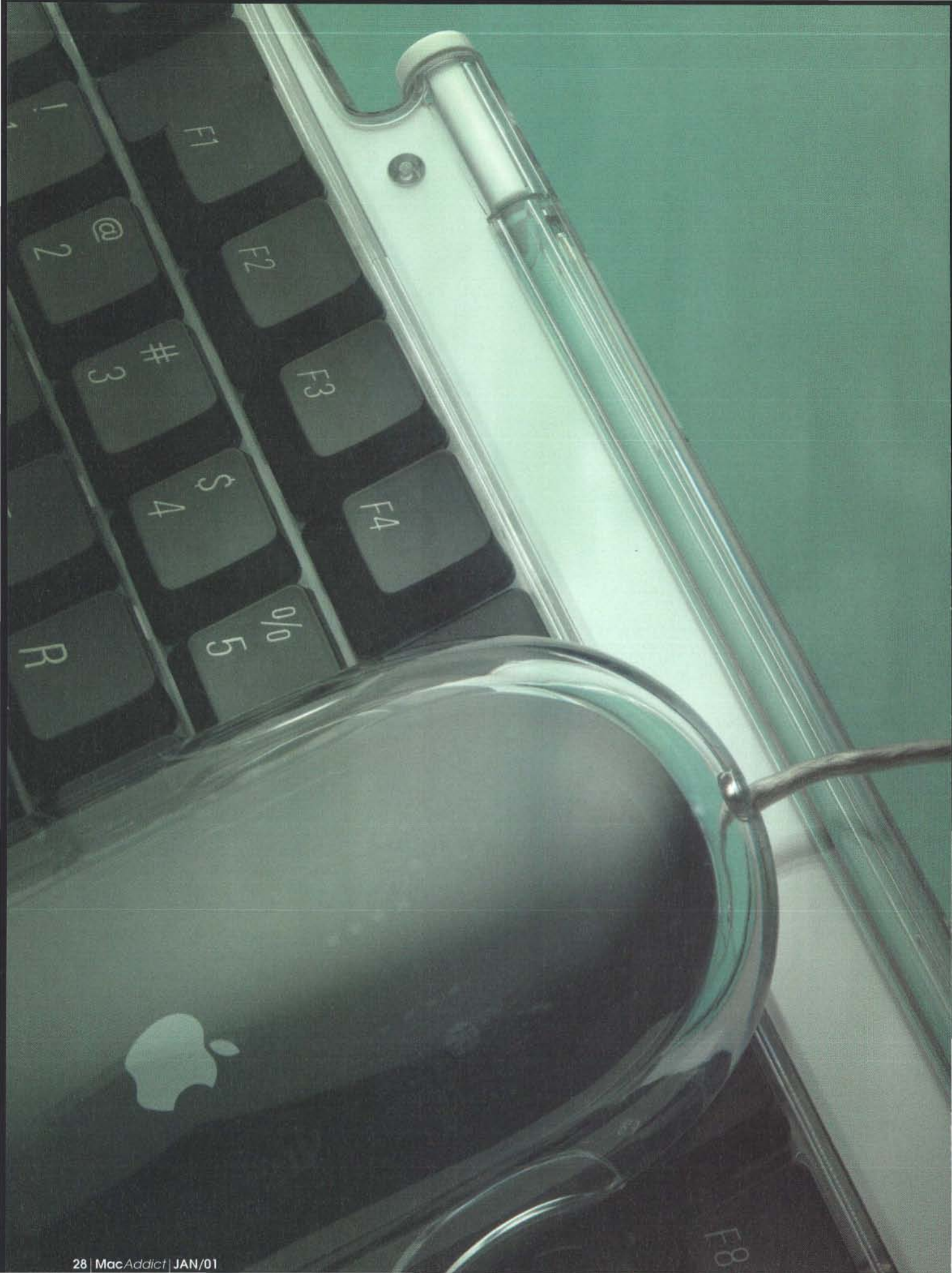
most stunning computers ever made

photography by Stan Musilek

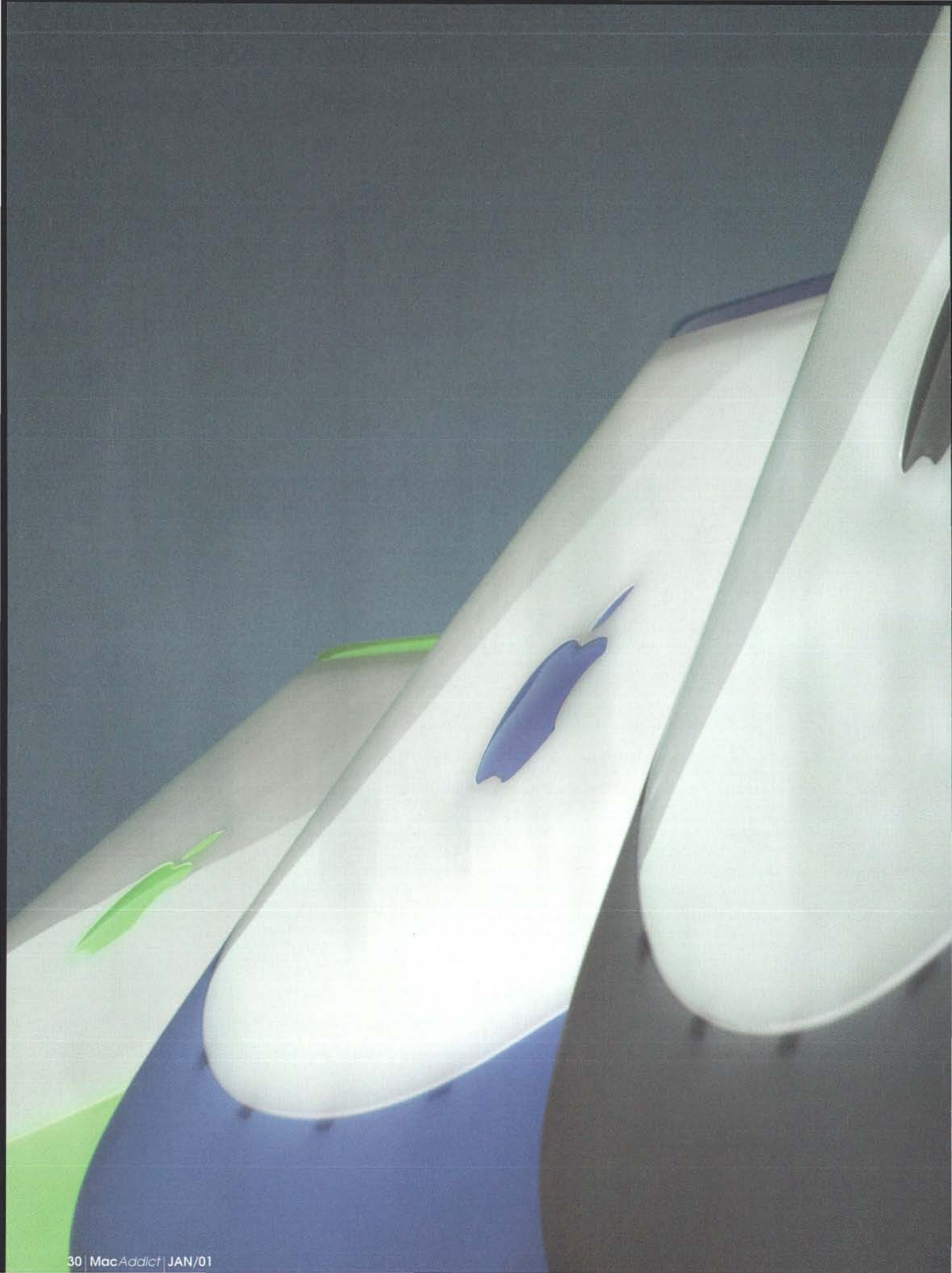




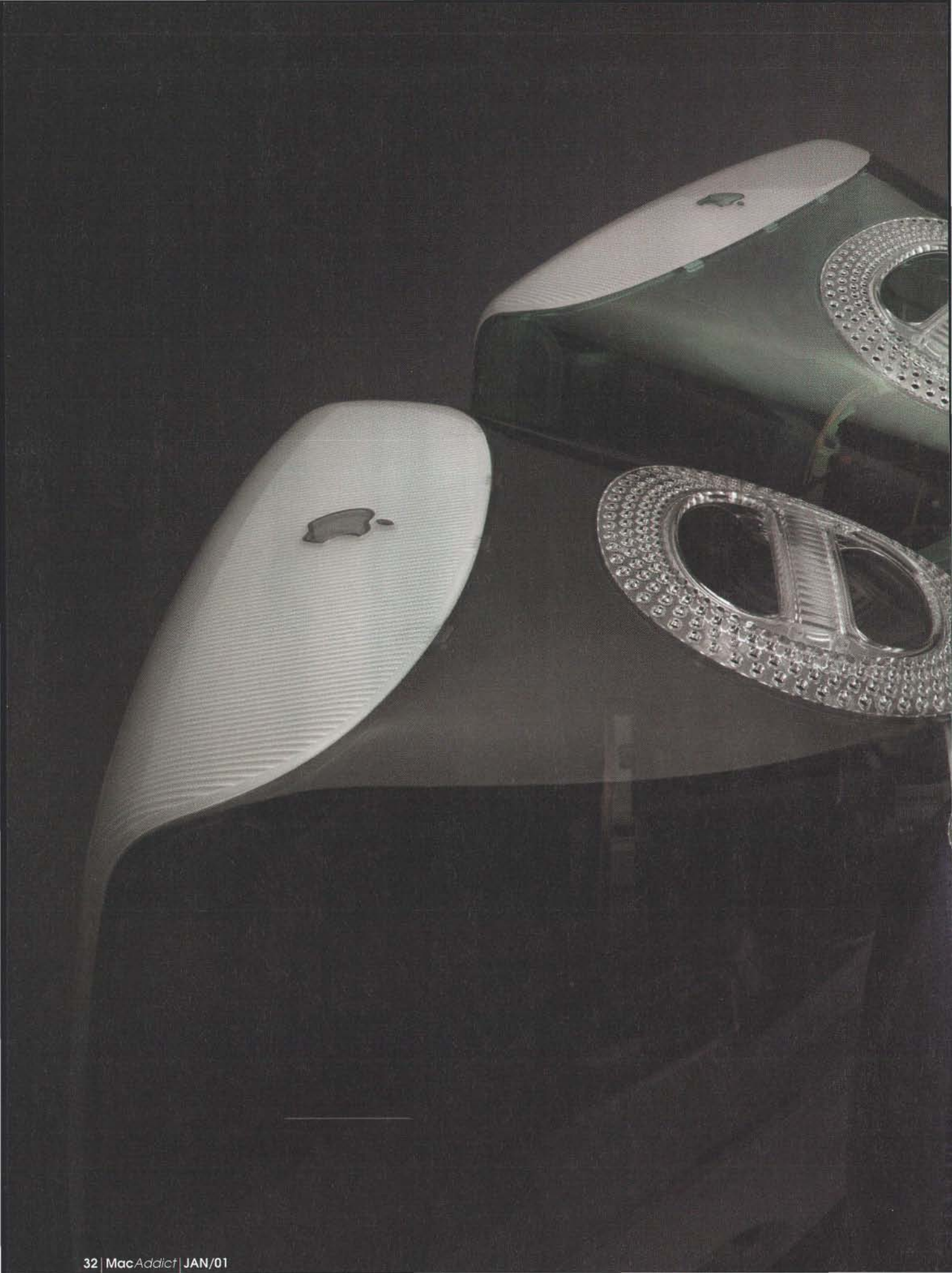


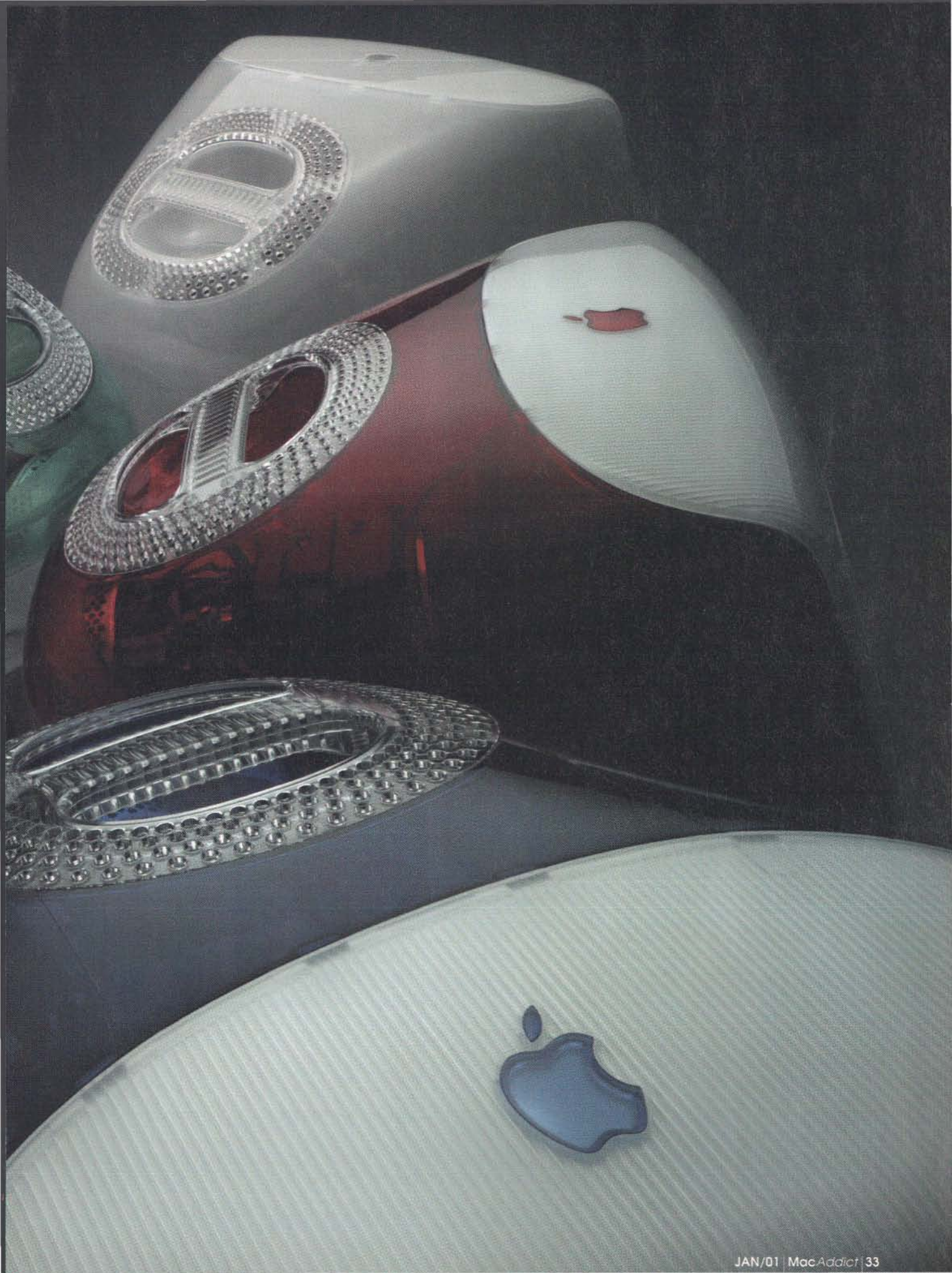
















The Great Migration

Hook up your old SCSI, serial, and ADB peripherals to your brand-new Mac

by Alan Stafford illustration by Carlos Aponte

Compared to their forerunners of years past, new Macs come relatively cheap. The same goes for peripherals: Scanners and laser printers used to cost thousands of dollars, and even inkjets would cost as much as a washing machine; now, you can get a printer for less than the cost of a big run to the dry cleaner. But just because shiny new devices come cheap doesn't mean you want to throw out perfectly good peripherals.

Unfortunately, when you finally break down and trade another paycheck (or two or three) for one of the shiny new Macs out of Cupertino, your peripherals may not be able to make the trip. In the past couple of years, Apple has dumped ADB, serial, and SCSI ports like last year's shoes in favor of faster, more modern interfaces such as USB and FireWire. To make many of your old devices work with a new Mac, you must buy an appropriate adapter—otherwise you'll have to shell out more shekels for new peripherals.

In this article we tell you which adapters will work with your old peripherals, how much they'll cost you, and when to throw in the towel and just buy new devices. Know, however, we're talking only about single-solution adapters—that is, ones that address your SCSI, serial, or ADB needs. Combination cards that can take care of multiple needs are available, but we didn't want to devote another 20 pages to adapters (we think you'll thank us for that).

Hardware isn't the only hurdle for your faithful old peripherals. Moving to Mac OS X may prove challenging as well. Unfortunately, we're not psychic, so we can't predict how OS X will shake things up. We did, however, get several prominent vendors, along with some adapter companies, to talk a little bit about their OS X compatibility plans. Hopefully, their commitments and the information you find here will help you wring a little more life from those beloved old peripherals you just don't want to part with.

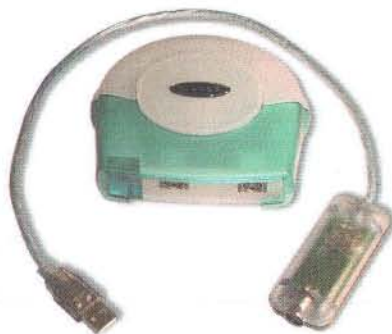
To Be ADB

Works On: keyboards, mice, trackballs, drawing tablets, joysticks, hardware dongles, AppleVision monitors



The reviled puck mouse is gone, but its departure didn't eliminate other input-related quandaries. Some people still prefer the silky-smooth keys of Apple's ADB-enabled Extended Keyboard II. And what about your favorite trackball, drawing tablet, joystick, or QuickCam? Not to mention bar code readers, hardware dongles, displays, and display calibrators—who's going to hook you up?

The Solution: A USB-to-ADB converter from Belkin (www.belkin.com) or Griffin Technology (www.griffintechnology.com) is your ticket to the promised land. For instance, Griffin's iMate (\$40 ESP) allows you to daisy-chain up to five ADB devices.



ADB connectors like ones from Griffin (top) and Belkin (bottom) allow you to move your favorite old keyboard, joystick, or other device to your new Mac.

Things to Watch Out For:

1. **Some older QuickCams require both ADB and serial ports.** Even if you were to buy an adapter for each, the driver software for those models is incompatible with Mac OS 9.
2. **New Macs don't have ADB controllers on their motherboards.** That means that your ADB keyboard can't start up a Mac, even if you have it hooked up via an adapter.
3. **Bratty ADB devices.** Most devices don't care if their path to your computer isn't pure ADB (if you decide to daisy-chain them), but a few get fussy, so check the companies' sites for compatibility info.

The Mac OS X Angle: Griffin says it will have OS X drivers done by the OS X ship date; Belkin says its OS X drivers will be ready by early 2001.

The Bottom Line: You can get a new keyboard or mouse (without the hairballs) for the same amount of money an adapter would cost. But for those great old keyboards and your high-end dongle-protected apparatus—or if you own several devices—an inexpensive adapter protects your investment.

Dos and Don'ts

Just don't say we didn't warn you...

DO

- Unplug any USB or FireWire cable any old time you like.
- Purchase a SCSI card that accommodates the highest speed of all your devices' SCSI versions. (See "Fuzzy About SCSI" for information on SCSI speed, p39.)
- Read the compatibility list on a company's Web site and check the operating system version required for an adapter. Many require a fresh OS (especially true of FireWire adapters).
- Choose an adapter fast enough for the device you'll attach to it (especially if you must use an adapter instead of a SCSI card). For instance, CD-RW drives and USB don't mix because of the speed differential.

DON'T

- Expect to run multidrive RAID arrays with USB-to-SCSI adapters. Let's see, 40 MBps pumped through a 1.5 MBps pipe—who can do the math?
- Operate multiple SCSI devices at one time with a USB adapter—it doesn't have the requisite bandwidth.
- Buy an \$80 adapter for a printer you could replace for \$80. Let it go.
- Unplug an ADB, serial, or SCSI cable while your computer's running.



Nooooooooooooo!

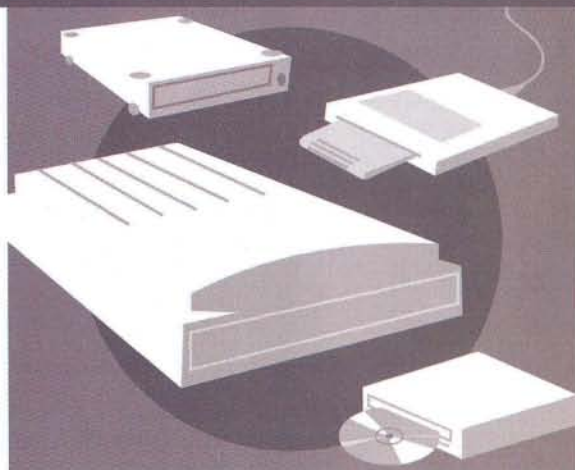
Time to Unload

Sometimes it's just time to let go—yes, even of the printer that helped you send proud pictures of Skippy the new puppy to your parents years ago. But don't head for the trash dumpster just yet. There are some alternative solutions that you should consider.

1. Journey to the Utah landfill where Apple buried all its remaining Lisa computers. Dig 'em up, connect your old peripherals, and bury them again.
2. FedEx them to Steve Jobs. He did this to you!
3. Burn them in your fireplace. Ah, smell the toxic plastic smoke—more evocative than wieners on the barbecue, and better for you.
4. Have a yard sale; sell them to unsuspecting bargain-hunters. Note to self: Stop frequenting yard sales.
5. One word: eBay. Make that two words: eBay, *sucker*.

SCSI Unchained

Works for: scanners; CD-ROM, CD-RW, DVD-ROM, DVD-RAM, tape, magneto-optical, and hard drives; removable storage devices (Jaz, Zip, Orb)



Getting a SCSI device to work with a SCSI-challenged Mac is the most common migration issue upgrade holdouts face. The iMac was the first model to snub SCSI, and by early 2000 Apple had completely rid its line of the once-standard interface.

Solution 1—G3 or G4 Tower Owner

Buy a PCI expansion card from a company such as Adaptec (www.adaptec.com), Atto Technologies (www.atto.com), and Orange Micro (www.orangemicro.com), among others. All of them make cards in various flavors of SCSI, with both internal and external connectors, ranging from \$65 or so on up to \$500. (See “Fuzzy About SCSI” for a rundown of which SCSI version does what, p39.)

To connect an old hard drive or scanner with a new Mac, first determine which card you need based on the device's SCSI version. For instance, an UltraWide SCSI card is faster and more expensive than a SCSI-2 card, but devices that only meet SCSI-2 specs can't take advantage of the extra speed, so there's no point in spending more money on the UltraWide card. Additionally, though all SCSI versions are backward-compatible, connectors vary. For example, if you want to use a 50-pin SCSI-2 hard drive with a 68-pin Ultra Wide SCSI card, you'll need a 50-to-68-pin cable or an adapter; some cards come with adapters, or you can purchase them as an option.

In some cases, however, springing for a card in a faster flavor makes sense if you're trying to accommodate multiple devices in different SCSI versions or you're planning to add more devices in faster SCSI versions—just buy a card that matches your fastest device and watch that chain crank!



A SCSI card like this Adaptec 2940UW is all you need to unite your PowerMac and your old SCSI peripheral in perfect harmony.

Solution 2—PowerBook, Cube, or iMac Owners Who Have One SCSI Device

Those poor, slotless Macs simply have nowhere to fit a PCI card. Instead, go with a single FireWire-to-SCSI or USB-to-SCSI adapter—for instance, Orange Micro's Orange Converter FireWire-to-SCSI adapter (\$99 ESP), which offers 10-Mbps SCSI-2 speed. However, forget about SCSI chains and terminators—the Orange Converter supports only one device at a time.



Fire up your peripherals by connecting them to a FireWire-to-SCSI adapter.

Solution 3—PowerBook, Cube, or iMac Owners Who Have More Than One SCSI Device

A USB-to-SCSI adapter is your ticket here. Such products include Belkin's USB SCSI Adapter with Termpower (\$99.99 SRP), Adaptec's USBXchange (\$79 ESP), and Xircom's Portgear USB to SCSI Converter (\$69.99 SRP, www.xircom.com). Some of these adapters can support up to seven devices in a SCSI chain, though Adaptec recommends two at maximum because the USB interface is so much slower than even the slowest SCSI version: 1.5 MBps burst and 700 KBps sustained throughput. That sustained speed is equivalent to just over 4X in CD-ROM terms—insufficient to allow such devices as the latest SCSI CD-RW drives to work at their fastest speed; try it and you'll be burning coasters. But you should be able to make the setup work if you tell your CD-burning software to ratchet the write speed down to 4X (although with some drives you may have to go to 2X).



Ideal for daisy-chaining several SCSI devices, the USBXchange (top) and the Belkin USB SCSI adapter (bottom) hooks them up to a USB Mac.

Things to Watch Out For:

1. Some SCSI devices won't work with certain cards (or even some computers or versions of the Mac OS). For example, Hewlett-Packard (www.hp.com) says several of its old scanners—even the ScanJet 6100, which came out in early 1998—won't work with some Adaptec SCSI cards. Adaptec says HP designed its old drivers with the built-in SCSI of older Macs in mind, and notes that switching to third-party scanning software such as SilverFast (price ranges from \$99 to more than \$1,000; www.silverfast.com) or Second Glance's Scantastic (\$79 ESP, www.secondglance.com) will skirt the issue (though you may be

putting that money to better use if you buy a new scanner). Microtek (www.microtek.com) cautions that a couple of its really old scanners, such as its ScanMaker 600GS and 600ZS, are incompatible with both Mac OS 7.6 or later and Adobe Photoshop 4.0 or higher. Our advice: Weigh the cost of a card or adapter against the resolution you can get with a new scanner. If your old scanner maxes out at 300 dpi, it's probably time to ditch it.

2. Some low-priced SCSI cards won't allow you to boot your Mac from disk drives connected to them. That's because in order to support booting, the card must have a special chip. For example, Adaptec's SCSI Card 2906 (\$60 ESP) doesn't have such a chip and thus won't allow you to boot to a hard drive hooked up via that card, but its PowerDomain 2930U (\$100 ESP) does and will.

The PowerDomain 2930U (left) contains a special chip that allows you to boot your Mac from disk drives other than the main one. The 2906 (right) has no such ability.



3. Speed slowdown with USB adapters might drive you nuts.

Low-resolution scanning (resulting in small file sizes) should work fine with a USB-based adapter, but if you routinely scan high-resolution, large-dimension documents, you should look elsewhere, because the speed (or lack thereof) will bum you out severely.

The OS X Story: Epson (www.epson.com), HP, and Microtek all insist they'll support OS X, but none of the companies has yet compiled a complete list of scanners it plans to support. According to an Epson spokesperson, the company recently finished a major upgrade of its core TWAIN driver, and the revised code will make it easier to update for OS X. Michael Papet, Microtek product specialist, said Microtek will start by supporting a few models, but eventually will support OS X "pretty far back."










Bottom Line: Deciding what kind of SCSI card to buy shouldn't be difficult. The devices you have pretty much make the decision for you. Older SCSI hard drives, for example, just require inexpensive SCSI cards to work, while the drives that offer greater capacity and speed usually demand faster, pricier cards. If your Mac doesn't have PCI slots, then you need to go to Plan B. Choose a FireWire adapter over USB for your SCSI devices to preserve speed (unless you've got a base iMac with only USB).



Fuzzy About SCSI

Macs have included SCSI since the Mac Plus, even though the machine didn't even come with an internal hard drive; maximum data throughput hustled at 1.25 MBps. The Mac SE, introduced the following year, came with a monster 40MB SCSI hard drive. And 15 years after the Plus,

Apple kissed SCSI goodbye with the FireWire PowerBook. Yet through the years, people stockpiled SCSI devices—hard drives; scanners; CD-ROM, Jaz, and Zip drives; even printers. This chart displays the various versions of SCSI, which now reaches 160 MBps and should hit 320 MBps next year.

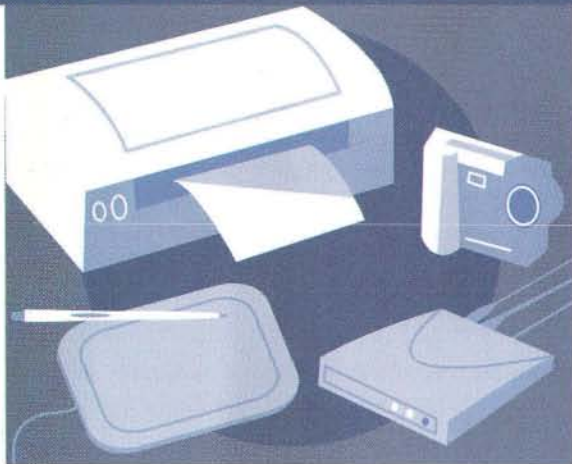
Protocol	Maximum Throughput (MB per second)	Used In	Optimum External Connector Type	What the Connector Looks Like
SCSI-1*	5	Scanners, Zip drives, and hard drives	DB 25, LD 50 (Centronics 50)	
SCSI-2 (aka Fast SCSI)**	10	Hard drives; Jaz and Zip drives; scanners; CD-ROM, CD-R, and CD-RW drives	HD 50	
Fast & Wide SCSI	20	Hard drives and RAID's	HD 68	
Ultra SCSI	20	Hard drives, CD-RW drives, and Jaz drives	HD 50	
Ultra Wide SCSI	40	The hottest, fastest, most high-end hard drives	HD 68	
Ultra2 SCSI	40		HD 68	
Ultra2 Wide SCSI	80		HD 68	
Ultra160 SCSI (aka Wide Ultra3 SCSI)	160		VHD 68, HD 68	
Ultra320 SCSI (not yet available)	320	The new Ferrari?	TBD	

*Macs from the Mac Plus until the first PCI-based PowerMacs featured SCSI-1

**Macs from the first PCI PowerMacs until today's FireWire-equipped Macs featured SCSI-2

Serial Boxes

Works On: printers, digital cameras, MIDI devices, drawing tablets, PDAs, modems



Connecting a geriatric printer to a new Mac presents a greater challenge than hooking up SCSI devices. Because new Macs lack serial ports, you must use an adapter that can connect your serial devices. Choosing the right adapter is the hard part—the problem stems from LocalTalk, Apple's old networking protocol, which allowed multiple Macs to share files and print to networked printers. Over a serial connection, one Mac can communicate with only one device; but LocalTalk is a different beast, enabled by a chip that sits on the motherboard of older Macs. This means to add LocalTalk to new Macs—and to give them networking capabilities—you need an adapter that has the chip, which dramatically steps up the cost. In practical terms, this means some adapters (the cheaper ones that lack the chip) won't work with some printers.

Solution 1—G3 and G4 Owners

The gPort from Griffin Technology (\$49 ESP) and the Stealth Serial Port made by GeeThree (\$50 ESP, www.geethree.com) are small cards you install in the internal modem slot on your G3 or G4 (the downside is that you must remove the modem if you have one there). Both companies say the devices work with either serial or LocalTalk printers (see "How to Set Up a Modem Port Adapter," p41).



The Stealth (left) and gPort (right) are the new ports on the block.

The Deal with Handhelds

Such gadgets as Palm (www.palm.com) devices and digital cameras depend on the Mac serial port to transfer data to and from your computer. Likewise, all but the most recent MIDI devices use serial. Are your pixels, tunes, and data stranded?

Not necessarily. Palm sells the PalmConnect USB Kit, a \$40 USB-to-serial adapter; Keyspan's USB PDA Adapter (\$39 SRP) provides a single serial port (it operates at a slower speed—57.6 Kbps as

Solution 2—iMac, Cube, and PowerBook Owners, or Those with G3s or G4s Who Depend on the Built-in Modem and Need to Hook Up a Printer

Farallon's EtherMac iPrint LT (\$109 ESP, www.farallon.com) lets you connect a LocalTalk printer to a Mac's Ethernet port (and network the printer with other Ethernet-enabled Macs). Asanté makes the AsanteTalk Ethernet-to-LocalTalk bridge (\$125 ESP, www.asante.com), a similar product that supports all LocalTalk printers. If you require only a serial connection, then try Farallon's EtherMac iPrint SL (\$83 SRP).



Bridge the communication gap between your new Mac and your LocalTalk printer with the EtherMac iPrint LT (left) and AsanteTalk (right).

Solution 3—Those Who Have More Than One Serial Device but Don't Require LocalTalk Capability

Keyspan's USA-28X USB Twin Serial Adapter (\$79 SRP, www.keyspan.com) handles serial devices (including printers), but doesn't support LocalTalk. It does provide two serial ports, however, so you can connect a serial printer and another device such as a QuickCam. In our tests, the USA-28X worked well with a StyleWriter 2400, even allowing printer sharing over the network. Several other vendors, including Belkin, CompuCable (www.compucable.com), and Xircom, also offer USB-to-serial adapters, though they all forego LocalTalk.



Double your pleasure, double your serial devices with Keyspan's USA-28X USB Twin Serial Adapter.

Solution 4—Those Who Own an Apple or Old Epson Printer and Have a Serial Mac Lying Around

If your impasse involves an Apple printer, consider this option—with Apple's Printer Share extension, which came with your System disc, you can keep the printer hooked to your old Mac, network it via Ethernet to your new one, and print over the network connection. You must keep both Macs on, and they must have the same version of the printer's driver installed. We tried it with a StyleWriter 2400 and it worked fine.

opposed to 230 Kbps—than the serial adapter, though that should be plenty fast enough for a pokey PDA). Any of the serial adapters mentioned in this article should allow you to connect not only a Palm but also any old serial product.

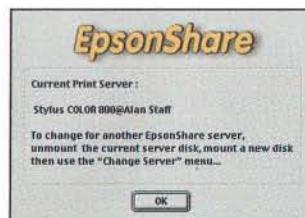


Since Palm devices are still stuck in serial la-la land, you'll need a USB-to-serial adapter to hot-sync your handheld and new Mac.



Don't put that old Mac out to pasture: Use it to network a StyleWriter printer with your new Mac.

For old Epson printers that don't use USB, try NiceBoy Software's EpsonShare (\$24, www.ses.fr/niceboy). With EpsonShare you can set up your old Mac (to which you must attach the printer) as a print server. Install the identical version of the Epson printer driver on all networked Macs, then start up EpsonShare on client Macs. As long as you can use File Sharing, you can share the Epson printer.



Share it, don't chuck it. The EpsonShare shareware app lets you network new Macs to old Epson printers via an old Mac.

Things to Watch Out For:

- 1. Adapters that don't spell out which products they support.** Most companies maintain comprehensive lists on their Web sites, and some point out potentially compromised behavior.
- 2. LocalTalk printer adapters.** The natural inclination is to choose the least expensive device, but you may end up with a serial-only adapter that doesn't support LocalTalk.

The OS X Story: Almost every adapter vendor says it'll write OS X drivers for its products by the time OS X ships. "We already have rudimentary functionality accomplished—that is, communicating with our USB serial adapter via the USB port on a Mac running Mac OS X," said Keyspan president Mike Ridenhour. Belkin reports it'll have updates for its products by early first quarter of 2001; Asanté says it'll support only its newer products; and Adaptec says the USBXchange will get a new driver, as will its SCSI cards.

Getting a driver for the adapter is only half the battle, though; you must have an updated device driver as well. Palm says this is no problem—it'll provide OS X software support. Digital cameras and MIDI devices will also require updated software, but as with printers and scanners, don't bet that devices older than 1998 (when the USB era began) will work with OS X. Epson and HP both say they'll offer OS X drivers for their newer printers, but older printers may get left behind. (Neither company could yet provide a comprehensive list). Apple refused to say whether it would support all of its own printers, but in the Mac OS X beta release, Apple did include a generic PostScript driver that supports basic functions but no printer-specific options. For an application to recognize that a printer has a duplex unit attached, for example, the printer manufacturer must supply additional software. And don't forget—that driver doesn't support non-PostScript printers, such as inkjets.

The Bottom Line: It's a bit loony to spend even \$49 on an adapter to connect a tired old inkjet printer. But an adapter may be a good investment for more expensive serial devices, such as dye-sublimation or LocalTalk laser printers (especially ones with hardware PostScript), which are expensive to replace. Just make sure the adapter supports LocalTalk.

How to Set Up a Modem Port Adapter

Using the Stealth Serial Port from GeeThree, you can ditch your sluggish 56-Kbps internal modem and use the modem port for something truly useful: a serial connection. In this how-to, we show you how to install the Stealth on a G4 with AGP graphics. Note that there's a different product for blue-and-white G3s as well as G4s with PCI graphics. Check GeeThree's Web site for more details.



- 1** Unscrew the box that holds the modem port.



- 2** Remove the screws from the metal box that holds the modem port and take the port out of its casing.



- 3** Tape your modem connector to the side of the computer to get it out of the way, then install your new serial port in the space formerly known as the modem port.



- 4** Take out the two screws that secure the actual modem, then remove the port by detaching it from the modem card.



- 5** String the Stealth Serial Port cable underneath the video cards (center of photograph) and the hard drive cables.



- 6** Screw in the Stealth Serial Port card where the modem used to sit. Plug the cable from the serial port into the Stealth Port card. Once you install the Stealth Port software from the CD (or the Web site), go nuts plugging in all of your serial devices.

Portrait of an


Find an interview
with Stephen
Johnson on
The Disc.

Artist

by Cathy Lu

How one man is taking digital photography to new heights

Some people might say Stephen Johnson lives a charmed life. That's because as a digital landscape photographer, he's had the opportunity to see some of the most beautiful places in the country. From Olympic National Park in Washington State to the Everglades in Florida, Johnson has traversed approximately 75,000 miles and entered 50 national parks, all in the effort to become the first photographer to document these landmarks digitally. The project, called "With a New Eye: A Digital National Parks Project," has been Johnson's labor of love for the past six years. He conceived it in 1994 as a way to test and showcase a new technology he had just started experimenting with—the scanning camera. "With a New Eye" endeavors to highlight the powers of the budding medium.

Yet this medium still lacks the recognition it deserves, even though Johnson, whose work has appeared in *Life* magazine and on *ABC News*, has produced some astounding images of nature. In all of this he relies on his PowerBook G3, working in harmony with his camera equipment to produce the realistic colors and incredible detail for which he's known. But that's not the only way the Mac has served him. Back in Apple's early days, Johnson laid out an entire photography book on California's Central Valley using PageMaker and Mac models including the Macintosh SE, II, IIx, and Quadra.

In some ways, it seems unnatural: capturing nature with cutting-edge, high-tech equipment. But the way Johnson sees it, his method is the most accurate way to preserve nature's beauty on paper.

Q&A with Stephen Johnson

Back in August, *MacAddict* talked with Stephen Johnson in his Pacifica, California, studio about the finer points of digital photography. We were also curious as to how a traditional film landscape photographer ended up going the digital route. That story starts with a man named Michael Collette (www.betterlight.com), who was building a scanning insert for a view camera. In September 1993 he demonstrated a working prototype to Johnson, who had already seen what the technology was capable of.

Stephen Johnson: [When Mike called,] I said, "Mike, let's do a little test. Let's shoot some film and let's shoot your digital camera, side by side." It seemed amusing to go to every clichéd tourist spot we could think of in San Francisco, and that's what we did....What really amazed me was what I saw when I went home and opened up those files on a big 20-inch monitor. I saw detail in those photographs unlike anything I had ever seen in the history of photography. I saw an ability to record highlight and shadow detail way beyond film. We had been doing gray balances all day, so the color was just dead-on because we kept balancing the sensor to light. And the resolution was stunning. There was no grain....And in a sense—a very profound and real sense—film died for me that day.

MacAddict: Is there still a reason to shoot film?

Stephen Johnson: I would say you have to ask yourself what is the reason for shooting digital—you have to want that kind of quality and be willing to make sacrifices to use it. The scanning camera requires at least a one-minute exposure for full resolution...and there's the sheer cost. The BetterLight 6000, which I'm using for most of my work at this point, is a \$16,000 camera insert.

MacAddict: How has the maturing technology changed your photography over the years?

Stephen Johnson: I remember when we used the first color PowerBook in 1994, the 540C. If I wanted to open one of the full-resolution files, I had to download it from the camera onto the hard drive of the PowerBook and turn around and open it in Photoshop. The whole process took almost 20 minutes....Now I open almost every file I shoot in the field. [The process now takes about 1 minute 20 seconds.]

MacAddict: In terms of image editing, how much do you do?

Stephen Johnson: First of all, any photograph [I make]...comes in as a vertical whether it's shot horizontally or vertically. Since I shoot mostly horizontal, I've always got that rotation to do. I also have to run a slight unsharp mask, because CCD images by their very nature are somewhat soft. I'm very careful to take the sharpening back to what I would call the native sharpness of the lens—I don't try to recover from any softness in the original focus, I simply try to get the edges commiserate with what I was seeing on the ground glass through the lens to begin with.

MacAddict: But you won't retouch your work too much.

Stephen Johnson: The last thing I'm going to do in this project on the national parks is start editing things out or putting things in. My ethic remains the same as it always was. If you make the photograph strong and well-seen, then you merely try to get the best print you possibly can—not by changing it, but by being true to it.

In May 1997, Johnson took this photo of an eroded hill in Badlands National Park, South Dakota, as part of the Parks project.

MacAddict: It seems like a lot of your work is about conservation.

Stephen Johnson: Yes, and it always has been—from that first work at Mono Lake, when I discovered it was dying because of water diversion to Los Angeles....That's what the "At Mono Lake" exhibit [a group exhibit Johnson curated featuring more than 150 years of photography] was about—not to say, "Save Mono Lake," but to say, "Look at Mono Lake. Here's how all these photographers for over 100 years have been looking at it. Pretty remarkable place, isn't it? By the way, this is what's happening to it." You don't need to say anything that overt with art. What you need to do is show people what something is. If you can do that in an elegant and beautiful manner, and the place in and of itself has an inherent eloquence, it can speak for itself. In a sense, as landscape photographers, what we do is try to record the beauty we see.

Tips for Digital Dilettantes

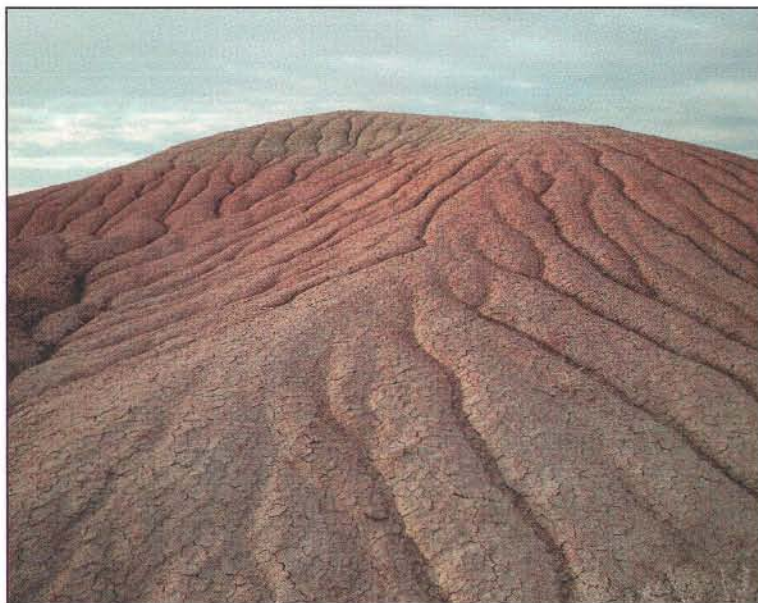
Here are professional photographer Stephen Johnson's tips for amateur photographers.

Tip 1: Do not use a high JPEG compression ratio—either turn off compression or use the highest image-quality setting you can.

Tip 2: Turn off your digital camera's built-in sharpening feature if it has one. According to Johnson, this feature oversharpenes images and ends up building halos around contrasting areas. Sharpen the images yourself in Photoshop by inspection.

Tip 3: Save your images as TIFFs rather than JPEGs, if your camera offers this feature. You'll end up with larger files and use up disk space more quickly, but your images will be more detailed.

Tip 4: Think about what you want to do with your pictures. If you want to make 11 by 14 or 8 by 10 prints, even with a 3-megapixel camera, you're better off with film. According to Johnson's discerning eye, 5 by 7 is as large as you'll want to go with a digital print from a consumer camera, although, he says, many people are happy with larger digital camera prints.



The Inner Workings of a Photo Shoot

Going on a photo shoot with Stephen Johnson feels a little like a weekend camping trip. His load, however, does not contain tents, poles, and 12-packs, but rather a tripod, digital scanning insert, PowerBook G3, 4 by 5 view camera, and GPS receiver (to record the exact location where shooting takes place). While Johnson has the process of packing, hauling, and unpacking his equipment down to a quick-and-dirty science, the job doesn't lack peril. Take the time he journeyed to the Grand Canyon. As his camera was busy scanning the scenery, his PowerBook tumbled over the edge of the canyon and hung on by a SCSI cable. (To the Mac's credit, when Johnson reeled the machine in, it was still scanning.) On this particular photo shoot—to the Fitzgerald Marine Reserve in Montara, California—we experienced nothing so heart-stopping. Here we show you the anatomy of taking a panoramic picture and what it's like when technology, the Mac, and nature converge.

1 The Setup

After picking a location, Johnson sets up his equipment. Here he's planning to make a panorama, so he sets up a panoramic tripod head—he uses a level to make the camera sit straight on the tripod. Johnson then drapes what photographers call a dark cloth over the camera and looks through the camera to make sure he has found an image he likes. If he has, he plays with the composition, works with the depth of field, and adjusts the aperture, all by eyeballing the scene through the viewfinder. This is trickier than you might think as the images appear upside down and backward.

Once he finishes setting up the picture, he inserts his BetterLight scanning device into the camera and hooks the camera to his PowerBook via a SCSI cable. Both the scanning camera and the Mac have 6GB hard drives, so he can save the image to either device. Johnson also carries two removable expansion-bay hard drives, one 8GB and one 12GB, to store those hefty high-res shots—some panoramas can amount to as much as a gigabyte each.

Stephen Johnson (right) and his assistant Eric Doyle work on leveling the pano head and camera.

2 The Prescan

The next step is to take a 750-by-1,000-pixel, 2MB prescan of the image via BetterLight scanning software. This low-res scan allows Johnson to inspect the composition onscreen. It also creates a histogram that displays highlights, shadows, and distribution of brightness values, and indicates whether the exposure is off. Depending upon what he sees and how much time he has, he sometimes opens the file in Photoshop to look at a more detailed

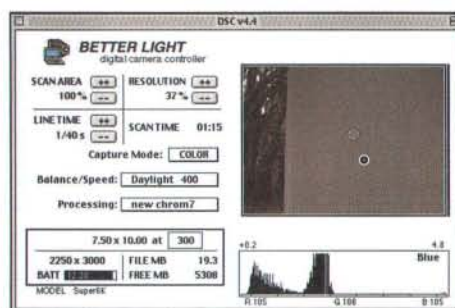
About the Artist's Work

Stephen Johnson prints all of his own artwork on rag paper using either an Epson 9500 pigment printer or an Iris. Visit him on the Web at www.sjphoto.com. The Parks project was made possible by: Adobe Systems, Apple Computer, BetterLight, DayStar Digital, Dicomed, Digital Pond, FWB, Iris Graphics, Newer Technology, Radius, Ricoh, and Sinar Bron Imaging.

histogram and to zoom in and examine the focus. In this particular image, Johnson pays close attention to where the highlights fall and whether they are overexposed.

3 Color Balance

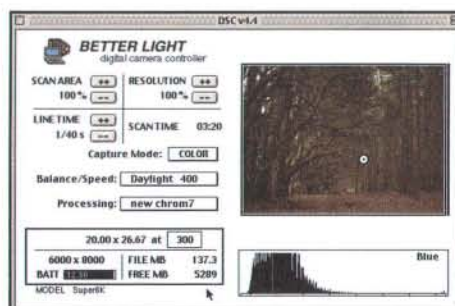
The next step is to color-balance the scanning camera to make sure the sensor adjusts for ambient light. To do this, Johnson holds up a gray card in front of the lens and does a prescan. He then picks a densitometer point in the scan that he wants to make neutral gray. Performing an autobalance tells the software to neutralize the gray balance point, and rescanning the gray card confirms that the software achieved that result. He then looks at the red, green, and blue values—equal numbers for R, G, and B mean the sensor is reading the card as dead-on gray. If the values vary, Johnson needs to tweak the color balance.



The grays have it. What Johnson is looking for here is almost equal R, G, and B values—here, they come close enough to satisfy him.

4 The Scan

Before doing a high-res scan, Johnson performs another prescan of the scene to make sure the color balance looks accurate. He's now ready to do a conventional rectangular (as opposed to panoramic) full-resolution scan, which will produce a 140MB file. On a typical, bright day, a scan at 100 percent resolution would take 66 seconds. Since this is a particularly overcast day, and the shoot is taking place in the woods, a full-res scan takes a whopping 3 minutes and 20 seconds.



Got time to kill? The scanning software indicates that a full-res scan in this light will take a full 3 minutes and 20 seconds.

5 Inspecting the Scan

When the scan finishes, Johnson scrutinizes the image for problems (preferably in Photoshop, if he has time). He notices that some of the foreground branches lying on the ground are unfocused, and that the depth of field is insufficient for this particular scene.

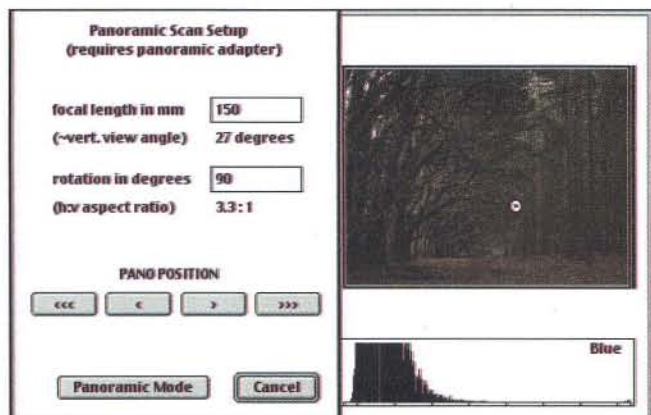
6 Making Adjustments

To fix the focus and depth of field, Johnson compensates in two ways: He stops down a lens (this means reducing the aperture from f-11 to f-16, or taking the lens from a wider opening to a smaller opening), and adjusts the image plane of the view camera to provide more foreground sharpness. To compensate for the smaller aperture, he must change the exposure, which means an increase in scan time. To alter the exposure, he changes the line-scanning time in the software from $\frac{1}{40}$ of a second to $\frac{1}{20}$ of a second per line (there's a total of 8,000 lines). This doubles the scan time and also means starting over again with a prescan and another full-res scan. Since the software indicates that a full-res scan will take 6 minutes and 40 seconds, Johnson decides to scan a quicker 8MB file, which is sufficient to show him that the branches are much more in focus this time.

7 The Panorama

Now it's time for Johnson to try his hand at a panorama. He first locates a starting point for panning—he does this by rotating the camera via the software while looking through the viewfinder to make sure the camera lines up properly. He then sets how many degrees he wants the camera to rotate—in this case, 90.

It takes 2 minutes for the camera to pan 90 degrees and make the lowest-resolution scan possible—a 5MB, 750-by-2,500-pixel file. The prescan reveals a pleasant surprise—the sheer range of trees the panorama captured is much greater than Johnson had anticipated.



Here, Johnson sets the camera's range of motion and uses the arrows to line up where he wants the camera to start panning. In the focal length setting, he indicates the type of lens he is using (in this case, a 150mm).

He also notices that the image is a little underexposed and lacks some detail. To capture more nuances of shadow detail, he increases the bit depth from 8 to 14 (which the software ends up saving out as a 16-bit file)—in other words, from 256 levels of gray per channel to approximately 16,000.

Now he's ready to scan the scene at full resolution in panorama mode, which will produce a 6,000-by-19,634-pixel, 674MB, 16-bit file. The process takes a tedious 16 minutes and 21 seconds, during which time Johnson and his assistant decide to shield the camera with an umbrella so the wind does not disturb the scanning process—any wind or movement may cause a jitter or distortion in the image. Once the image finishes scanning, Johnson—not having enough time to open a 674MB file on his PowerBook—picks up his gear and heads home to review the results.

Mac Pack Rat

Looking at Stephen Johnson's Mac collection is a little like looking at Imelda Marcos's shoe collection: You don't know where to start counting. Here's what his collection includes: one Mac IIx, two Quadra 950s (upgraded to PowerPCs), four Power Mac 9500s (upgraded to G3s), one Power Mac 9600 (upgraded to G3), one Daystar Genesis (upgraded to G4), one Workgroup Server 9150 (upgraded to G3), one SuperMac S900, one Twentieth Anniversary Mac, two Wall Street PowerBook G3s, one PowerBook 3400, one PowerBook 540C, and—last but not least—one Power Mac G4.

Trip Tools

With 65 pounds of equipment, you're probably wondering, what is all that stuff he carries around? Here are his tools.

Sinar-X 4 by 5 camera; BetterLight Super 6000 digital scanning insert (6,000-by-8,000-pixel trilinear sensor); lenses: Sinaron 65mm, 150mm, and 300mm, Schneider 90mm and 210mm, Goertz Red Dot 600mm; Gitzo carbon-fiber tripod; Prototype panoramic adapter by BetterLight and BayHouse; an additional camera: Kodak DCS 460 on Nikon N90 body; Garmin GPS receiver; and a PowerBook G3 (Wall Street edition)



The finished panorama...well worth the wait.

Cathy Lu wants to travel to national parks for her job. Ahem.

reviews

Another year, another product-packed Reviews section.

Photoshop 6.0

design & graphics

You can dock a context-sensitive tool options bar at the top or bottom of your screen.



FREAKIN' AWESOME!

The most valuable products, the coolest gizmos.



SPIFFY

A solid offering. Overall a good investment.



YEAH, WHATEVER

Neither recommended nor rejected. Some might like this, but we weren't impressed.



BLECHI

Give us back the time we spent testing this.

Company: Adobe Systems

Contact: 800-833-6687 or 408-536-6000, www.adobe.com

Price: \$609 (SRP), \$199 (upgrade)

Requirements: Power Macintosh (multiprocessor G4 recommended), Mac OS 8.5 or later, 64MB of RAM with virtual memory on (128MB recommended), 125MB of free hard disk space, CD-ROM

The toolbox sports new slice, vector shape, and annotation tools. The crop tool is back, too.

The annotation tool lets you add notes to your images.



The Layers palette displays more information about layers and the new Layer Styles.

You can now add character and paragraph styles to text.

When Adobe rolls out a new version of Photoshop, it's always an event. This ultra-heavyweight image editor is an essential tool for art directors, animators, artists, digital filmmakers, publishers, game developers, Web designers, and anyone else who pushes pixels for a living.

Photoshop has had its share of lackluster or even troublesome updates, so for you skeptics, here's the quick summary of version 6.0: It's a painless upgrade that will make your print and Web work much easier. It contains no major aggravations (such as version 5's irritating interface changes and color management debacle),

and at least two of its new features (vector art and Web graphic slicing) will make you say "Wow!"

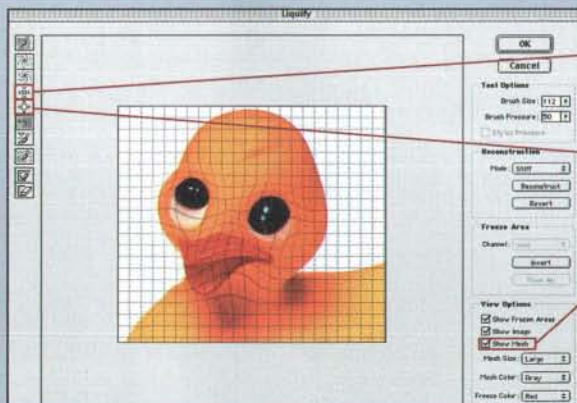
For starters, the well-honed Photoshop interface has received a few welcome tweaks. We're not usually partial to extra toolbars, but the new Corel-style tool options bar (which you can dock at the top

Liqui-ducky

Kai's Power Goo may be last century's old hat, but Photoshop is just catching up. Smoosh around to your heart's content with the new Liquify command.

1 Open an image. (Make sure it's an 8-bit image in RGB, CMYK, Lab, or Grayscale color modes.) Choose Liquify from the Image menu.

2 Try the bloat and pucker tools to create hilarious or horrifying deformations, or turn on Warp Mesh (check the Show Mesh box) and choose a smaller brush to make somewhat more useful modifications.



Pucker

Bloat

Show Mesh box

You need to break away from your Mac—or maybe the duck does.

or bottom of the screen) is well implemented. Not only does it let you park your palettes there, but it also displays contextual tool options intelligently. For example, the measurement palette options expand in the docking bar to allow numeric entry of transform and positional coordinates, replacing the modal Transform dialog box. Now you can actually see the effect on your image when you're entering coordinate data. Moreover, you can enter numbers in mixed units—3 inches by 45 pixels, for instance.

Photoshop used to make you jump through hoops to create a simple box, but the new vector tools simplify that process. In a move that weirdly recalls MacPaint and other long-dead apps, Photoshop now includes rectangle, rounded rectangle, ellipse,

polygon, line, and custom shape tools, available from a new shape tool in the toolbar (see "Getting in Shape," p48). These produce editable vector shapes that reside on their own layers. You can use shapes to create vector masks (called layer-clipping paths) and to paint pixels (that is, to make rounded rectangle buttons for Web use). Anyone who's worked with Bézier curves will have no trouble with Photoshop 6's new shapes. Custom shape libraries get you started, and you can create your own libraries or import them from Illustrator.

Beyond drawing shapes, you now have access to Boolean operations—add, subtract, intersect, and exclude—for quickly combining basic shapes to form more complicated objects. You can stroke

shapes; fill them with colors, gradients, and patterns; and set their color mode and degree of opacity. Using shapes as layer clipping paths, you can quickly create sharp-edged masks that remain editable throughout the work process. However, don't throw away your vector drawing program just yet—Photoshop still doesn't support many basic vector functions. For example, you can't group or lock shapes. (A less-powerful workaround for grouping is to put multiple shapes on one layer).

Of the vector objects, Photoshop users rely on text shapes most often—and up until now text handling has been one of Photoshop's weakest features. Previously, you couldn't type text directly onscreen. Instead, you typed it into an archaic Text dialog box with minimal formatting options. After making only half-hearted modifications in version 5, Adobe has finally got this feature right. Just click the text tool, select Type Specs from the contextual tool options bar, click within the canvas, and type away (see "Low-Maintenance Type," left).

Adobe has beefed up the text formatting attributes to include hanging indents, justification, word spacing, letter spacing, and hyphenation. The warped text feature is particularly cool. Select the text, choose Create Warped Text, and choose from a variety of sliders that create slants, arches, circles, and other deformations. This new feature saves you a trip to Illustrator or even After Effects. One quirk: Unrendered text looks awful at magnifications other than 100 percent, although it prints fine.

Photoshop 5 introduced the concept of layer effects such as shadows, glows, embosses, and bevels. Photoshop 6.0 takes the concept one step further by adding Layer Styles. You can now save a combination of effects as a Layer Style and quickly apply it to other layers or share it with other artists. Plus, an improved dialog box and more settings make layer effects easier to manage and apply.

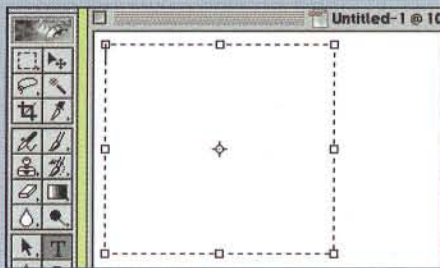
Do layer effects such as embosses and bevels make you think of Web buttons? Adobe hopes so. Layer Styles is just one way it has jazzed up Photoshop to appeal to Web designers. If you spend your days slicing and dicing animated Web graphics, you can stay comfortably inside Photoshop for much of

Low-Maintenance Type

Photoshop 6.0 replaces the reviled Text Entry dialog box with a type tool that's much easier to handle.

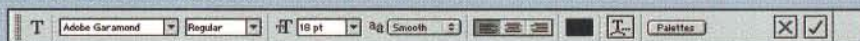
- 1 Select the type tool and drag out a bounding box.

Type your text in a bounding box right on the canvas.

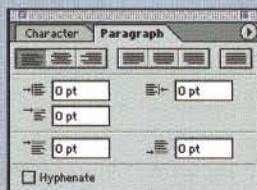


- 2 Format the text from the context-sensitive toolbar above the window. Clicking the Palettes button brings up Character and Paragraph palettes.

Format text from this toolbar.

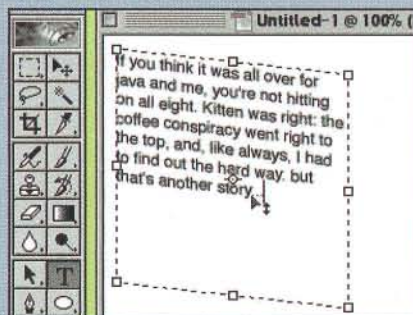


View the new Paragraph styles in this palette.



- 3 Enter your text. Grab the bounding box handles to resize the text block, or rotate it by dragging just outside one of the corners. Select the toolbar's checkmark button to save the text to a new text layer.

Enter or paste your text. Rotate and tilt the text with the bounding box.



audio

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ATI RADEON AGP VIDEO CARD
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multimedia

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fun & games

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productivity

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your work. A new slicing tool makes it easy to create a slice from any layer. You can create dynamic layer-based slices from a multilayer document, and the slices adjust dynamically to accommodate layer changes. Each slice can have its own level of weighted, channel-based optimization—the most flexible approach we've seen. At output time, Photoshop produces a numbered image set and a clean HTML table or CSS code you can easily paste into a Web page editor.

Photoshop can't quite handle every Web-oriented graphic task yet, so Adobe throws in a copy of ImageReady 3. A Jump To button in the toolbox launches ImageReady with the current document loaded. One new feature in ImageReady 3 is the ability to create custom rollover styles (for button glows and the like) based on the layer-based slices and Layer Styles you save in Photoshop. Apply the rollover style to a new layer in another document, and ImageReady slices the layer with the multiple rollover states and effects you've defined.

This release offers a grab bag of other goodies. Better color-management tools

mean you can avoid import-export color problems—you can even go back to Photoshop 4's color spaces. (Make sure you have the latest version of ColorSync for best results.) The Kai's Power Goo—style warping tool is not quite as much fun as Goo, but it's a lot more usable (see "Liqui-ducky," p46). The more powerful crop tool has moved back to the top level of the toolbox (for a while Photoshop had it nestled within the selection tool). It allows perspective warping of the selected area when you drag the crop box handles, and for easier viewing it grays out the image area outside the crop zone.

Photoshop's enhanced Extract Image feature does a better job of pulling masks from complex edges (such as hair), in many cases eliminating halos and other mask artifacts while requiring less work on your part. You can now export actions between Macs and PCs as mini-applications called *droplets*—very useful in cross-platform production situations. Photoshop 6.0 also supports Nav Services, so you can open multiple files

simultaneously from the Open dialog box. And finally, this version offers Print Preview (better late than never) and PDF export.

We found no major flaws in this revision, and very few minor ones. Perhaps Adobe has gone slightly overboard in catering to Web designers, losing sight of the fact that video and animation people still comprise a large segment of the Photoshop market. And while droplets are great, we still hope for a scripting language that automates Photoshop operations and (eventually) works across all Adobe applications.

The bottom line: If you've been using Photoshop for a while, you have every reason to upgrade. The vector and text tools and the Print Preview feature are worth the \$179 upgrade price. If you are new to image editing, get Photoshop now—it has no equal.—Steve Anzovin

good news: Better handling of vector imagery and text. Layer sets and styles. Creates slices and rollovers. Tighter integration with ImageReady. Improved masking and cropping.

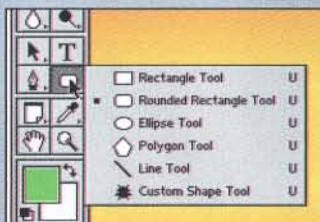
bad news: Nothing significant.



Getting in Shape

The new Vector Shapes make it easy to create graphic objects. Add a Layer Style, and you've got some serious button-making tools.

- 1 Choose the rounded rectangle shape from the new shape tool in the toolbox.



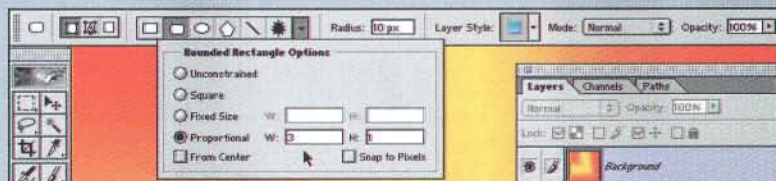
Choose from these options.

- 3 Draw several rounded rectangles to create your buttons. Notice that the colors change depending on how many you draw. That's the Layer Style feature in action.



Layer Styles interactively change the appearance of shapes depending on how many you draw in the Shape layer.

- 2 The context-sensitive toolbar brings up pop-up boxes in which you set the properties of the new shape. You can also experiment with preset Layer Styles.

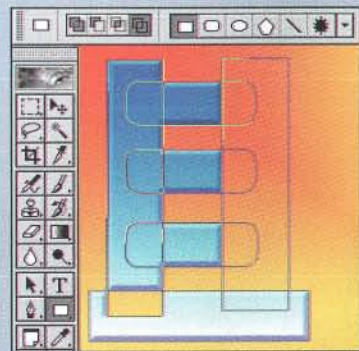


Enter options for the rounded rectangle.

Choose one of the preset Layer Styles.



- 4 Now play with Boolean operator choices in the toolbar to add, subtract, and multiply shapes.

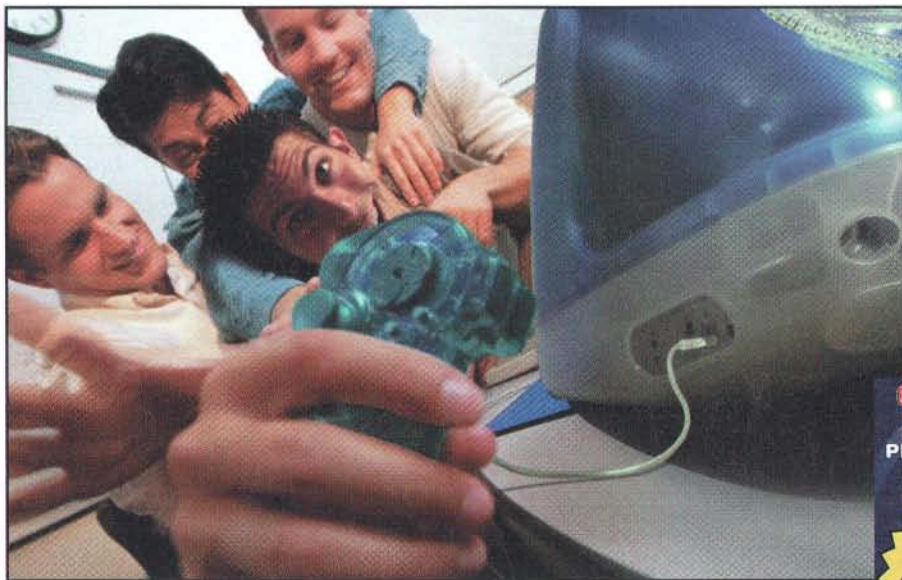
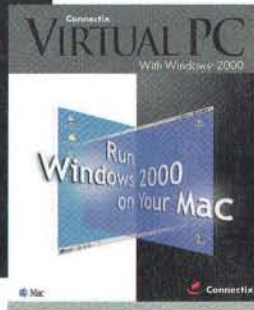


Overlay a different shape and experiment with Booleans.

The Adventures of **Connectix®** Guy



By day,
he uses
Windows®



By night,
he plays
PlayStation®
games



He does this **all** on his Macintosh.

Sure, he could do it like everyone else and have 3 different machines. A PC to operate Windows for work. A PlayStation console to play his video games. And, his Macintosh because it's his computer of choice. But no, he chooses to be more efficient, more productive and less crowded with equipment by doing it all on his Macintosh.

He uses Virtual PC for work, which is like putting a PC in your Mac. He also uses Connectix Virtual Game Station to play many popular PlayStation games on his Mac. With these two award-winning products from Connectix on your Mac, you can be just as independent and versatile as Connectix Guy.

Visit us at www.connectix.com or go to your nearest software retailer.



iBook SE

hardware

Company: Apple

Contact: 800-692-7753 or 408-996-1010, www.apple.com

Price: \$1,999 (SRP)

Requirements: 466MHz G3 processor, 128MB of RAM, 10GB hard drive, DVD-ROM, FireWire, USB, composite video out, 10/100Base-T Ethernet, 56-Kbps internal modem

The iBook has finally grown into its potential with the iBook SE. This third-generation low-cost laptop has almost everything you could want in a portable Mac, including FireWire, DVD, and video out, and its beefed-up internals make for the best portable you can buy under \$2,499.

Apple has upped the processor to 466MHz and included an ATI Rage Mobility graphics chip with 8MB of VRAM—enough to edit digital video and make the iBook a solid gaming machine at last. The new FireWire and composite video ports let you import and export digital and analog video properly for the first time, and the DVD-ROM drive makes movie playback a reality. Combine that with a 10GB Ultra ATA hard drive, and you have a heavy hitter in a rugged case.

Apple hasn't ignored the iBook's externals, either. It has changed the color of the internal plastics from ice to snow, giving the iBook a clean look. The solid keyboard is a joy to type on, and the

external plastics have gone from a matte to a glossy finish—matching the current G4 and iMac lines. (For those who tend to bang their books around, this model retains the rubberized bumpers).

Our iBook performed like a champ. It still has unbelievably long battery life (we played the DVD movie *Starship Troopers* and had an hour of battery power left), and the new FireWire port enabled us to capture, edit, and export digital video with the bundled iMovie 2 application. Thanks to the composite video port, we successfully used the iBook as a home DVD player (see "Cool Tool: Composite Video," below). Our particular iBook shipped with 128MB of RAM instead of the stock 64MB. Although more memory is always desirable, 128MB of RAM is a healthy amount, and should keep you up and running for a few years.

Our one real complaint with the iBook is petty—it lacks an audio-in port. But we rarely find that we need one, and USB microphones that do a fine job are readily

available. So this flaw is hardly worth mentioning, especially since the rest of the hardware package is so spectacular. (You can still plug a pair of headphones into the composite video-out port.)

If you're in the market for a Mac laptop and can't decide between the iBook and the PowerBook, here's some help: If you can't live without a PC Card slot, a second monitor, or 1024 by 768 resolution, get the PowerBook. Otherwise buy this little powerhouse—you'll get everything you want and spend a lot less. Snappy graphics, powerful processor, all the latest ports, long battery life—you can't beat the iBook SE. —David Reynolds

good news: Solid processor and graphics subsystem. FireWire and composite video-out ports. DVD playback. Better plastics and colors. Great keyboard. Killer battery life.

bad news: No audio in. Has only a single speaker. (Hey, we had to find something bad about it.)



Finally the iBook SE fulfills its destiny as the best-of-breed low-cost laptop.

PHOTOGRAPH BY AARON LAUER

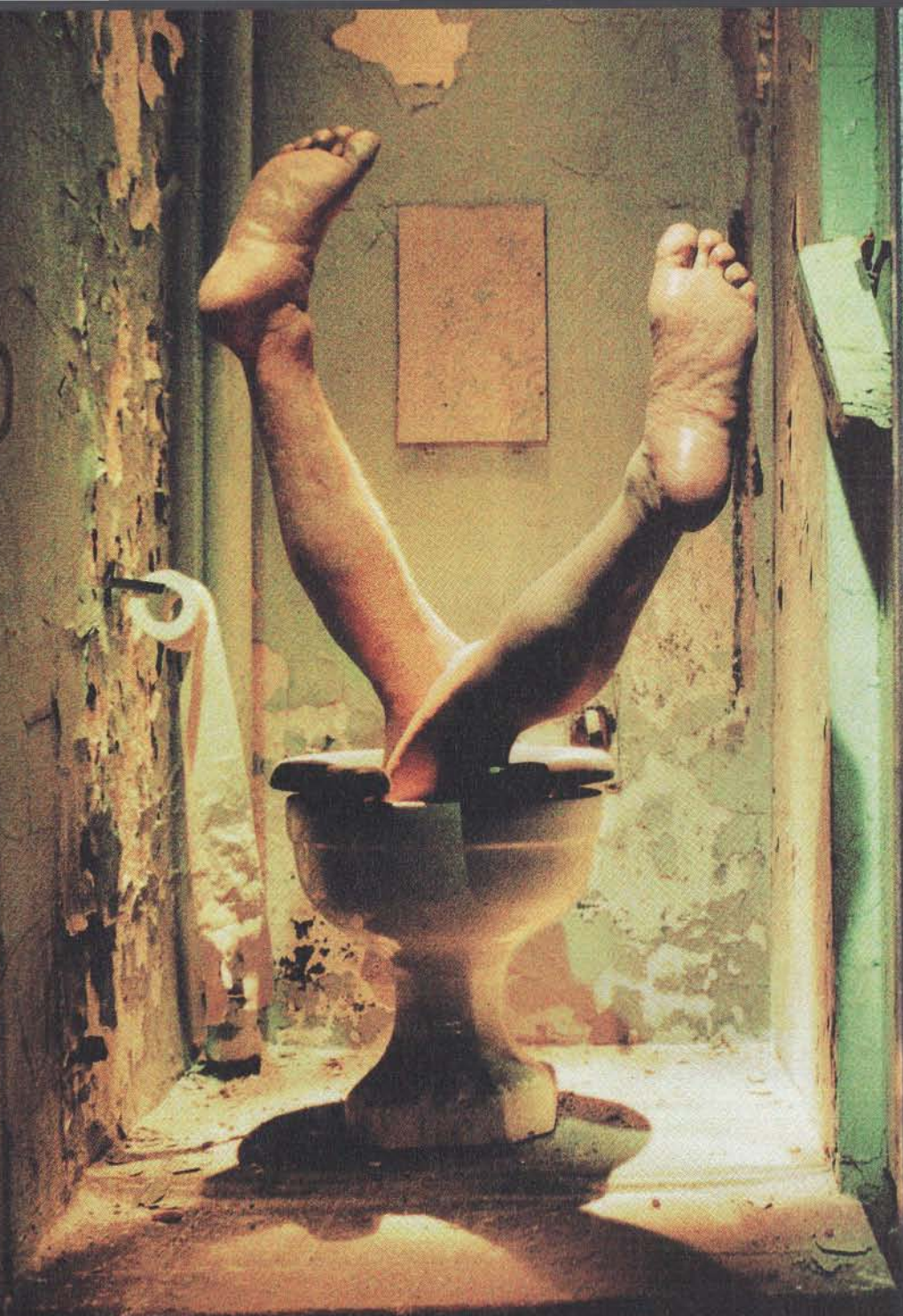
Cool Tool: Composite Video

The iBook SE ships with a composite video-out port, which lets you mirror your iBook's video to any device with a composite video-in port. This includes newer televisions, VCRs, and many camcorders. This feature lets you show DVD movies on your television as well as print your iMovies to videotape. The port looks like a headphone port (and works like one, too), but it also sends composite video through the special included cable.

To use it, plug one end of the cable (video plus left and right audio cables) into an AV device (such as a TV or VCR), the other into your iBook's video port. The iBook monitor will flash, and some new resolution options will pop up on the Control Strip. Now the TV or other device will mirror whatever image appears on the iBook's monitor. It's really that simple, and it works that well.



This itty-bitty port does double duty as headphone jack and AV port.



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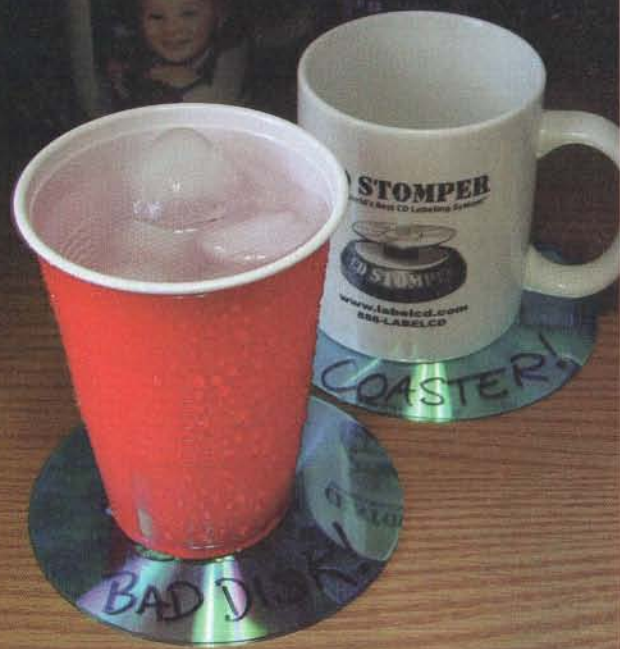
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Canon ZR10

hardware

Company: Canon

Contact: 800-652-2666, www.canon.com

Price: \$999 (SRP)

Requirements: FireWire-equipped Mac, or TV or VCR with RCA connectors

Canon is certainly no spring chicken when it comes to DV camcorders, and this time around it has packed a few big ideas into a compact camera—with a low price. The ZR10 is Canon's entry into the affordable DV market, targeting newbies—but does a good price necessarily make for a good deal? Not in the case of this camera.

Canon packs a number of features into the ZR10, including 10X optical zoom (200X digital), a flexible 2.5-inch color LCD, a color viewfinder, image stabilization, still photo capability, digital effects, and AV overdubbing. Unfortunately, some of these features don't play on par with the competition's. While the optical zoom executed clearly and smoothly, we found the digital zoom absolutely useless beyond the 40X point. The image stabilization did a decent job when we zoomed out, but when we zoomed in, the resulting video looked as if we'd had a beer too many. We thought the fade and wipe effects were pretty cool, though.

Overall, the ZR10's video quality is marginal—importing clips into Adobe Premiere, iMovie, and Strata VideoShop



ZR10 videotaping produced noise artifacts on slightly reflective surfaces, such as the back wires on this cage.



PHOTOGRAPH BY AARON LAUER

Canon's ZR10 is cute and cheap, but the video quality is less than we expected.

(via FireWire) resulted in some pixilated animation. The camera behaves best when you're shooting in bright, even lighting, though noise artifacts run amok over reflective objects. It delivers poor results under mixed and extremely low-level lighting—the exposure compensation and low-light features can't correct the problems. The camera has no built-in light, making it difficult to record or photograph at night (Canon sells an optional light for \$100, but you'll need an additional battery pack).

Although we appreciate the device's photo capabilities—and it did take some decent shots—most of our images ended up soft or littered with noise. Also, the only way to extract the still images is via video-capture software. Canon sells an optional device that captures still images—onto a floppy disk...nuff said. Hello? It would help to include photo-capture software.

On the other hand, the camcorder's sound quality is good and loud, thanks to the 16-bit, stereo PCM recorder (it has 12-bit mode, too). It picked up conversation across a room clearly and handled loud volumes without distortion. The audio dubbing feature came in handy when we needed to edit out a certain four-letter expletive.

Although we wanted to hug it and hold it when we first saw its cute and curvy exterior, ultimately the ZR10's antics made us put it back to bed in its bag. Canon designed this camcorder as a goof-proof device for novice users, but the only thing that's a goof is the camera itself.

—Kris Fong

good news: Good sound quality. Nice LCD features.
bad news: Poor low-light performance. Video noise.



Rio 600

hardware

Company: Sonic Blue

Contact: 408-588-8000, www.riohome.com

Price: \$169.95 (SRP)

Requirements: G3 or iMac, Mac OS 8.5.1 or later, 32MB of RAM, 10MB of free hard disk space, USB port, CD-ROM

If you're like us, you've had enough of cheesy techno music blasting your ears off at the gym. Well, luckily for you, Sonic Blue (formerly S3, which acquired Diamond Multimedia) provides some solid—and decently priced—ammunition in the form of a slick, teensy MP3 player so light (3 ounces without battery) that your shorts won't sag while it's in your pocket.

With 32MB of internal memory, the Rio 600 sounds great, looks cool, is easy to use, and offers true expandability. The player will use backpack adapters (unreleased at press time)—little

doohickeys that attach to the device's back—to add either 32MB or 64MB of memory for \$99 and \$169, respectively. These adapters currently rely on flash memory, but they're flexible enough to work with other (hopefully cheaper) standards.

The Rio 600 comes with a special version of SoundJam that encodes CDs and supports the transfer of MP3s to your player. Speaking of transferring music, downloading almost 32MB of music on this device took a mere 1 minute and 20 seconds—faster than other portable MP3 players we've tested. Other perks include the cover with belt clip and the ear-shaped headphones. You can delete any track, as well as create different playlists, all via the player itself. You can

Her name is Rio, and she fits right in your hand.



PHOTOGRAPH BY AARON LAUER

even customize your 600 by changing faceplates. Whether you *like* the available colors is a different story.

The one problem we encountered is that at first we had trouble loading songs onto the player. S3's technical support suggested upgrading the player's firmware (downloadable from an FTP site) and installing SoundJam with extensions turned off. Since then, our Rio 600 has been working perfectly, and our ears couldn't be happier.—Cathy Lu

good news: Small, light, and faster than Superman. Memory upgrades can expand with the technology. **bad news:** Some software and firmware tweaking required to download songs.

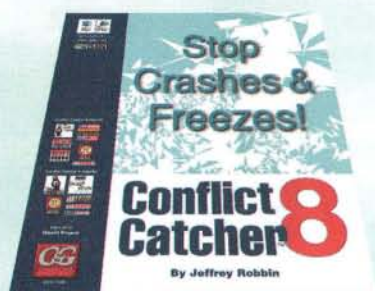


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mail order catalogs!



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Sales: 831.484.9228 • 800.359.4920
Web site: www.casadyg.com

Radeon AGP Video Card

hardware

Company: ATI Technologies

Contact: 905-882-2600, www.ati.com

Price: \$249 (SRP)

Requirements: Mac with AGP port, Mac OS 9 or later, QuickTime 3 or later, OpenGL 1.1.5 or later



The AGP version of the Radeon card packs impressive 3D muscle, along with some 2D flab.

Installing the card in an AGP-equipped Mac (that means G3 and G4 towers) is fairly straightforward. We had some initial problems with extension conflicts and card installation, but once we installed the ATI drivers with most extensions off, the card worked just fine.

The Radeon card gives great 3D performance, beating out both the Rage 128 and the Voodoo 5 5500 in Quake III Arena frame-rate tests by a healthy margin (see "Pushing Pixels," below, for the benchmark results). On the other hand, it had peculiarly lackluster 2D performance. In our Norton System Info tests (a suite of 11 common 2D graphics calls), the Radeon ranked dead even with the Voodoo 5 5500, and it actually performed *slower* than the Rage 128 Pro in our test system.

The upshot: The Radeon AGP Mac edition is a great card for hard-core gamers, who see frame rates as king. Graphics pros looking for ultimate performance might be better off getting a second PCI card (such as a Voodoo 5 5500 or Rage 128). Of course, if you really *need* that DVI-I connector or killer 3D performance, the Radeon might be the card for you.—David Reynolds

Pushing Pixels

The Radeon is an odd bird. Its 2D performance is strictly run-of-the-mill compared to other cards in its category, but its 3D performance is the best we've seen so far. Here's a quick look at the numbers (for those who care, our test system is a 500MHz dual-processor G4).

3D PERFORMANCE

(Quake III frame rates: Larger is better)

Card	Average frames per second
Radeon	43.9
Rage 128 Pro (original equipment)	40.9
Voodoo 5 5500	35.9

good news: Great 3D performance. DVI-I and S-Video-out ports on card. Seamlessly replaces Rage 128 and Rage 128 Pro original equipment cards. 32MB of graphics memory. **bad news:** You have to throw out an existing card to use it. 2D acceleration is lackluster. No ADC connector. Radeon special abilities such as Charisma Engine not yet built into games.



spiffy

VST FireWire RAID Array

hardware

120GB of smokin' portable power in a 9-inch-high stack.

Company: VST Technologies

Contact: 978-635-8200, www.vsttech.com

Price: \$999.95 (tower only); 40GB array \$2,699.95, 80GB array \$3,699.95, 120GB array \$4,699.95 (SRP)

Requirements: Mac with built-in OHCI-compatible FireWire port, including iMac DV, any G4 with AGP graphics, and any PowerBook G3 with built-in FireWire ports; Mac OS 9.0.4 or higher; FireWire support and FireWire Enabler 2.5 or higher

The VST FireWire RAID Array is a welcome product for digital media professionals. The 9-inch-high tower holds four VST FireWire Hard Drives that, combined, offer up to 120GB of storage, powered by a single PowerBook battery. You can format the drives in any volume configuration, including level 0, level 1, HFS, and HFS+.

We tested the tower in a simulated, onsite project, running on just the battery. It can run for up to three hours on a single PowerBook Lithium-Ion battery, a valuable feature for video professionals who need

high-performance storage independent of a power source.

So how fast is the drive? We formatted all four drives in a single striped volume. It *is* fast, but not as fast as we hoped a RAID array would be. The tower uses VST's portable FireWire drives, which run at 4,200 rpm (revolutions per minute)—much slower than most professional SCSI-based arrays, where the drives run at speeds up to 15,000 rpm. The array is also quite expensive. Established SCSI-based RAID arrays cost about half as much per megabyte—you're paying a premium for the device's amazing



PHOTOGRAPH BY AARON LAUER

portability. Because VST designed these drives for ruggedness, you can also use them as four separate 30GB volumes that you simply take home at the end of your workday. The VST FireWire RAID is a great device for anyone who needs large amounts of fast, portable storage.—Andrew Tokuda

good news: Portability. And who wouldn't want a 120GB RAID?

bad news: Expensive. Performance not as fast as you'd get from a less portable RAID.



superpowers



CodeWarrior Pro 6

productivity

Company: Metrowerks

Contact: 800-377-5416 or 512-997-4700,
www.codewarrior.com

Price: \$499 (SRP)

Requirements: PowerPC 601 or faster (G3 for Mac OS X development), Mac OS 8.6 or later (OS X Developer Preview 4 or later for OS X development), 64MB of RAM (128MB for OS X), 150MB of free hard disk space, CD-ROM

It's CodeWarrior.
It's running native
on Mac OS X.
'Nuff said.

About seven years ago, Metrowerks amazed us with the first compilers for creating applications in C, C++, and Pascal for the PowerPC platform. Now the company brings us CodeWarrior Pro 6 with OS X development tools. And while we've got some quibbles with the program, it's still the best compiler available for the Mac.

CodeWarrior is the dominant tool for the creation of C, C++, and Java software on the Macintosh platform. An Integrated Development Environment (IDE), it combines a text editor, project-management software, several compilers, a linker, and a debugger into a single application for viewing C++ classes, comparing files, and managing data during debugging.

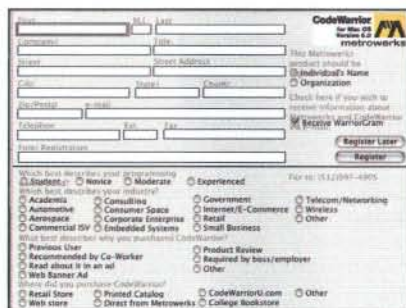
Unfinished Business

As usual, Metrowerks threw a lot of interesting unfinished code, utilities, and tidbits onto its Reference disk. Here's a brief rundown.

Banshee (Better And Newer SIOUX Handy Execution Environment)—A replacement for the venerable SIOUX, which gives standard text-based C and C++ apps a way to handle input and output. Banshee takes advantage of Mac OS 8 and 9 advanced features such as the Multi-Lingual Text Engine.

MW Perl—This one's drool-inducing. Metrowerks is working on a plug-in that will enable the CodeWarrior IDE to run Perl scripts during the build process.

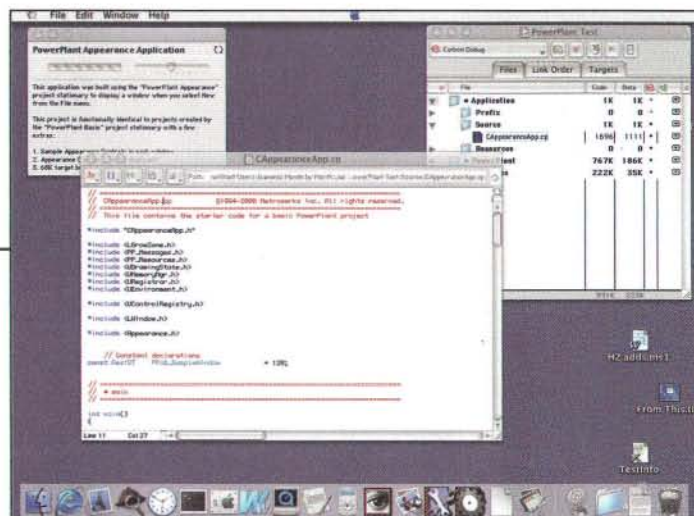
Let's start with the good news: CodeWarrior Pro 6 runs, compiles, debugs, and profiles applications natively in Mac OS X. This version has also Carbonized PowerPlant, CodeWarrior's application framework, so porting existing CodeWarrior projects to Mac OS X should be relatively simple (at least, compared to recoding everything from scratch).



The Registration dialog box is an extreme example of CodeWarrior's problems under Mac OS X—it runs, but with terrible layout problems.

While that's the bulk of the good news, there are other improvements. CodeWarrior Pro 6 supports the ANSI/ISO C++ standard better than ever. C++ programmers can now use templates as template arguments, and make the template keyword a qualifier. CodeWarrior Pro 6 is much stricter about const correctness than previous versions, so check your const declarations if the C++ code that compiled perfectly well in your last version suddenly refuses to work.

Not surprisingly, CodeWarrior is not geared primarily toward writing new OS X code. It doesn't offer any Cocoa support, so for now your OS X applications will have to use Carbon. OS X fans should poke around in the Thrill Seekers folder on the Reference



disk to find very preliminary versions of Mach-O support and command-line tools for writing native OS X applications (see "Unfinished Business," left). Also under the OS X Public Beta, you'll run into occasional IDE glitches: Several dialog boxes contain overlapping controls, and we encountered some crashes.

Unfortunately, CodeWarrior's oldest and most annoying problem rages on unabated—its compile-time error messages are among the most useless you'll find in any major compiler. Errors in one file (particularly near the end of a header file) still cause error reports in an unrelated file. A single mistake routinely causes hundreds of subsequent reports, all equally uninformative—"Something went wrong here, and it involves C++ code." A much less offensive fault is that CodeWarrior no longer includes a Pascal compiler and no longer comes with the Windows IDE.

Overall, CodeWarrior Pro 6 is a solid upgrade, but it will likely be the last version to ship without facing serious competition. Once the transition to Mac OS X is complete, CodeWarrior will be squaring off against Apple's ProjectBuilder/InterfaceBuilder freeware. If you're looking to port your Mac OS code to OS X, or if you've run into problems with template-based C++ code, get CodeWarrior Pro 6. Otherwise, just sit back and watch the fun as Apple and Metrowerks try to outgeek each other.—Ian Sammis

good news: Fully ported to OS X. Better C++ compliance.
bad news: Poor reporting of compile-time errors. No Pascal. Occasional strangeness on the OS X Public Beta.



Quik Sync 2

utilities

Company: Iomega

Contact: 888-446-6342, www.iomega.com

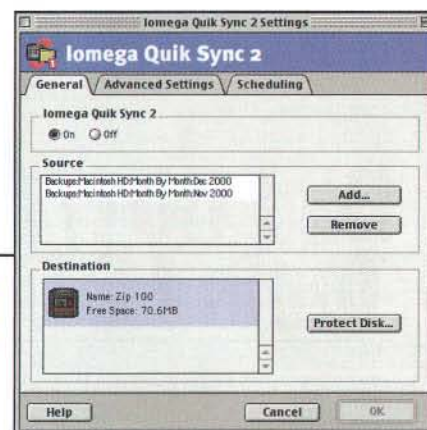
Price: \$19.99 (SRP)

Requirements: Power Macintosh, Mac OS 8.1 or later, 8MB of free hard disk space, 2X CD-ROM, Zip or Jaz drive

One of the more common uses of removable storage devices is as a backup mechanism. Many Zip or Jaz drive owners routinely maintain stacks of backup disks, which allow them to laugh (or at least smile) in the face of hard drive corruption—while colleagues bleakly run one utility program after another in the faint hope that they might recover some small number of files. Iomega apparently knows the needs of drive owners. To appeal to their “better safe than sorry” mentality, the company has released Quik Sync 2—a low-cost, simple, but fundamentally effective piece of backup software.

Iomega has finally resisted the urge to throw giant graphics all over Quik Sync's interface. We're grateful.

We should make one thing clear: This is not Dantz's Retrospect (www.dantz.com), the standard in backup software. Quik Sync (unsurprisingly) only works with Iomega hardware. It doesn't compress file backups, and it doesn't restore your working environment as Retrospect would. Instead, it just automates the backup method you'd use if you didn't have any backup software at all—it periodically copies new or altered files onto a Zip or Jaz drive. Quik Sync can also add version numbers to the file names as needed, in case you want to archive the last few versions. One minor quibble: The instructions within the Installation Assistant



are slightly inconsistent with Quik Sync's actual interface.

If you don't have Retrospect, we recommend Quik Sync 2, so long as you understand that it's a one-trick pony. You can download the program from Iomega's Web site and use it for up to 30 days before deciding if you want to spend \$20 on it. It's not brilliant software, but for the price, it's good enough to bail you out of real trouble.—*Ian Sammis*



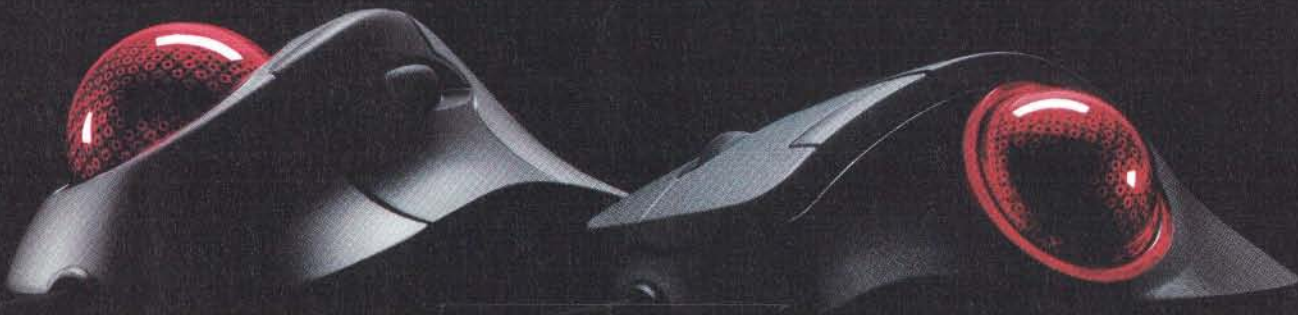
Find Quik Sync 2 on The Disc.

good news: Cheap. Uncomplicated.
bad news: Only works with Iomega hardware.



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Digi 001/Pro Tools LE 5.01

audio

Company: Digidesign

Contact: 800-333-2137 or 650-842-7900,
www.digidesign.com

Price: \$995 (SRP), \$799 (street)

Requirements: 200MHz PowerPC or faster (blue-and-white G3 or G4 recommended), Mac OS 8.6 or later, 128MB of RAM (192MB recommended), 26MB of free hard disk space, one free PCI slot, CD-ROM, 832-by-624-dpi color display, one or more Digidesign-supported ATA/IDE or SCSI disk drives

This isn't Digidesign's first foray into the budget hard-disk recording market, but it's the most impressive. The phenomenal Digi 001/Pro Tools LE 5.01 hard-disk recording and MIDI sequencing package comes complete with I/O hardware and recording and mixing software. For home studio professionals and quality-minded hobbyists, this combination packs an incredible value. We recorded and mixed a wide variety of records, and this system's quality and functionality astounded us.

A lighter version of the Pro Tools/TDM application (and thousands of dollars cheaper), this software-and-hardware package includes a PCI card, a Digi 001 rack-mountable audio/MIDI interface box, and Pro Tools LE software. It offers 24 record/playback audio tracks; 18 (count 'em!) discrete 24-bit I/Os, including two XLR inputs with independent gain and high-pass filter; 24-bit conversion and digital I/O (S/PDIF); one MIDI port; Real-Time AudioSuite (RTAS) plug-in architecture; and full mix-down automation.

We tested version 5.0.4 on a 450MHz G4 running Mac OS 9.0.4. (Digidesign should release version 5.1 soon). The three-part installation was quick and painless: We placed the PCI card in an empty slot, connected the card and Digi 001 rack I/O

Edit practically everything—from audio and MIDI info to volume and effects automation—in this one window.



with the included cable, and then installed the software. We recommend installing Pro Tools LE on a Mac OS Base extension set and activating only Pro Tools and your essential extensions. Fewer conflicts make for a happier world.

Pro Tools LE offers full hard-disk recording, editing, mixing, and 128-track MIDI sequencing. The GUI revolves around the Edit and Mix windows. In the Edit window, we cut, pasted, arranged, and faded audio and MIDI material. In the Mix window—complete with faders, meters, pan knobs, inserts, auxiliary sends, and master faders—we handled recording, monitoring, plug-in parameters, and fader automation. The two-window setup is both a blessing and a curse. The architecture is intuitive, but as the number of tracks grows, the mouse constantly scrolls and zooms to work on them.

The functional, albeit ugly, MIDI Operations Window handles most MIDI tasks, but don't toss your third-party sequencer yet. MIDI sequencing is relatively new for Pro Tools; the sequencer is adequate for basic recording, editing, quantization (the subtle time-shifting of MIDI data), and automation, but lacks such finer features as an event list editor, continuous controller faders, and play quantization.

Pro Tools LE's RTAS plug-ins utilize the Mac's CPU for processing, so the number

of plug-ins you can use simultaneously depends on how much processor power you have. The quality of the RTAS format blew us away. The equalization and compression plug-ins sound identical to their full-blown Pro Tools/TDM cousins, although some of the virtual-effects plug-ins (reverb, delay, and so on) are less impressive and tax the processor. Still, there's plenty of power to go around. In one song, we activated 30 plug-ins across 23 audio tracks with fader/plug-in automation, and we experienced no glitches. Shazam!

Without dropping ten grand for the full system, we got great-sounding audio and a good understanding of the Pro Tools solution. We recorded superclear tracks using the Digi 001 24-bit converters, although we would have liked more than two balanced analog outputs. The supplied literature is essential and thorough—about as thick as the Old Testament. Overall, Digi 001/Pro Tools LE 5.01 is an awesome package that's sure to grow with your audio needs.

—Andrew Reid

good news: Fantastic sound quality. Powerful RTAS plug-ins. Many I/O options. Relatively cheap.
bad news: Weak MIDI section compared to third-party sequencers. Only two balanced analog audio outputs. Requires a lot of mousing.



The Digi 001 audio/MIDI interface box connects your MIDI instruments to your Mac.



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"Majesty: The Fantasy Kingdom Sim is one of the hottest strategy/sim titles available this holiday season."

Jay Swartzfeger, MacCentral.com



MACPLAY™
www.macplay.com

Commotion Pro 3.1

multimedia

Company: Pinnacle Systems

Contact: 800-474-6622 or 650-526-1600, www.pinnaclesys.com

Price: \$1,995 (SRP)

Requirements: PowerPC, Mac OS 8.5.1 or later, 64MB of RAM, 30MB of free hard disk space, CD-ROM, video card with millions-plus color capability, QuickTime 4 or later



Find a demo of Commotion 3.0 on The Disc.

Pinnacle System's Commotion has long been recognized as a powerful tool for adding complex effects to live-action footage. The latest incarnation, Commotion Pro 3.1, adds new features such as the Primatte Keyer and improves on paint tools and project management. This is an essential application for video and film postproduction professionals.

For those new to Commotion, this app lets you enhance video or film by correcting color and stabilizing motion; add special effects such as lightning, fire, and smoke; and edit graphic elements. This is particularly useful for adding objects not originally in the shot or,



Painting on layers is handy for cartoon cel painting. Commotion Pro can paint both in a layer window, and directly in the composite window.

conversely, taking existing objects away. We're reviewing Commotion Pro version 3.1, the latest release as of press time, but all the features we mention are available in version 3.0 and later.

Perhaps the most utilitarian new feature is Commotion Pro's real-time preview on both a computer monitor and an NTSC monitor. Allowing you to view your work prior to rendering, this feature saves hours of render time. Using 256MB of RAM out of an installed 640MB (gargantuan but standard for video professionals), we could preview over 4 seconds of full-motion, 720-by-480-pixel, 30-fps footage.

Commotion is a master at isolating objects from their background. Version 3 adds the Primatte Keyer plug-in, a world-class filter for compositing bluescreen elements (actors or props filmed on a soundstage in front of a pure blue or green background). The Primatte Keyer does an excellent job of turning the blue or green background of a filmed shot transparent, integrating it seamlessly with the background layer. Commotion still features its powerful roto-splines—paths drawn on a layer using a Bézier pen tool. You can animate these paths to match the movement



You can set roto-splines, one of Commotion's most popular features, to track a moving edge. This eliminates a lot of manual work.

of the foreground object, effectively masking out the background. There is no limit on how many roto-splines you can use, and you can control each point on a spline precisely to match the object's shape.

Commotion has also improved its painting features. Painting on a movie frame by frame creates effects resembling hand-colored black-and-white footage, moving oil paintings, and the now common squiggly paint lines over video. Commotion still features a solid painting tool set, including an airbrush, conventional brushes, special FX brushes, and smudge tools, as well as an excellent rubber-stamp brush for cloning sections of an image. Version 3 now features the ability to paint on a layer directly in the composite window, eliminating the need to open a separate layer window. While it's not a new feature, cartoon animators will love Commotion's Cartoon Fill feature for hand-drawn lines that resemble physical animation cels.

Other new features in version 3 include an integrated project environment, which stores relevant clip data within the project file itself. The new procedural compositing and filtering methods give you greater latitude while experimenting, since you can simply delete applied effects, leaving the imported clip untouched.

Commotion's interface and filters make it easy to fix postshooting problems. While we still dream of a version optimized for a dual-processor G4 and Carbonized for OS X, we're not waiting to upgrade. The overall feature set and solid design of Commotion Pro 3.1 offer compelling solutions for today's production problems.—Mike Caputo

Celebrity App Match: Commotion Versus After Effects

There are really just two players in the Mac motion graphics and animation arena: Commotion and Adobe's After Effects. Here's a brief feature comparison.

	Commotion Pro 3.1	After Effects Production Bundle 4.1
Frame Painting	Yes	No
Video Output Preview	Yes	No
Motion Tracking	Best	Good
Bluescreen Keying	Best	Good
Unlimited Layers	Yes	Yes
Layer Group Hierarchies (aka Nested Compositions)	No	Yes
Third-Party Filters and Effects	Some	Many
Network Rendering	No	Yes

good news: Outstanding keying, painting, and roto-scoping tools. Live NTSC preview. Excellent motion-tracking feature. **bad news:** Doesn't support nested compositions. No online help. Not compatible with all After Effects plug-ins.



Risk II

fun & games

Company: MacSoft

Contact: 800-229-2714 or 612-249-7600,

www.wizardworks.com/macsoft

Price: \$29.99 (SRP)

Requirements: 132MHz PowerPC or faster, Mac OS 8.1 or later, 32MB of RAM, 5MB of free hard disk space (155MB recommended), 4X CD-ROM

There's always a chance that a computer port of a board game will go terribly wrong—not this time, though. Risk II not only succeeds as a translation, but also improves on the original game.

The game offers two main playing options, Classic Risk and Same Time Risk. Classic Risk, as the name suggests, is just like the board game. Players take turns reinforcing, attacking, and making final tactical moves. In Same Time Risk, players make their moves simultaneously, so you have to decide where

Delightful animation accompanies your opponent's demise as you make an assault from multiple fronts in Same Time Risk.

to place all your armies without knowing where other players are reinforcing. When all players have finished making their choices, the placements are revealed and you can decide where to attack. You make your attack decisions, like your reinforcement decisions, without knowing what your opponents will do. Even attacking is different in this mode—you attack a single target from multiple countries simultaneously.

Hasbro and MacSoft have delivered hands-down the best computer-game translation and version of Risk to date. The graphics and animation are clever and exceedingly well done, as are the effects and

music. The outstanding artificial intelligence offers a variety of computer personalities to play against. You can even play over a LAN or the Internet.

If you're a Risk veteran, you'll find a lot of terrific new gameplay in Risk II. If you've never played Risk before, this version offers an opportunity to play one of the greatest strategy games of all time. Bottom line, every Mac gamer will enjoy this one.

—Rick Sanchez

good news: Well-balanced gameplay. Best version to date.
bad news: Un-Mac-like interface.
It didn't come sooner.



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MiniHub FireWire (Above)



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MiniHub 2.0 USB Hub (Above)



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BBEdit 6.0

productivity

Company: Bare Bones Software

Contact: 781-687-0700, www.barebones.com

Price: \$119 (SRP), \$39 (upgrade), \$79 (competitive upgrade)

Requirements: PowerPC processor, System 7.5.5 or later (Mac OS 8.6 recommended), 6.5MB of RAM, 20MB of free hard disk space

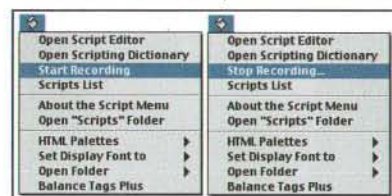


Find BBEdit 6.0
on The Disc.

If there's such a thing as a 500-pound gorilla of text editors, BBEdit is (still) it. In fact, the term *text editor* hardly does BBEdit justice. The app can handle anything from plain text, to HTML and XML markup, to C++ source code. Bare Bones Software has updated the product slogan to "It *still* doesn't suck," and the company's not just blowing smoke.

BBEdit 6.0 represents a major under-the-hood overhaul. You'll notice its support for Mac OS Appearance Manager, Navigation Services, and QuickTime translation, all of which you can toggle on and off in BBEdit's Preferences settings. You might also notice the improved syntax coloring of code, scripts, and HTML markup—not a big deal until you consider that BBEdit is now extensible, so users can extend the program's out-of-the-box capabilities. Developers can write plug-ins to give BBEdit syntax support for other scripting, programming, and markup languages. The BBEdit CD includes some of these plug-ins; more are available at the Bare Bones site, where you can also grab the BBEdit Plug-ins Developer Kit.

In terms of human languages, BBEdit 6.0 also represents a leap in the international direction with full Unicode text-encoding support. Now, with the right language support on your Mac (remember, Mac OS 9 includes all the available Language Kits), BBEdit can process and save documents in many non-Roman languages, including Cyrillic, Asian, and Middle Eastern alphabets. However,



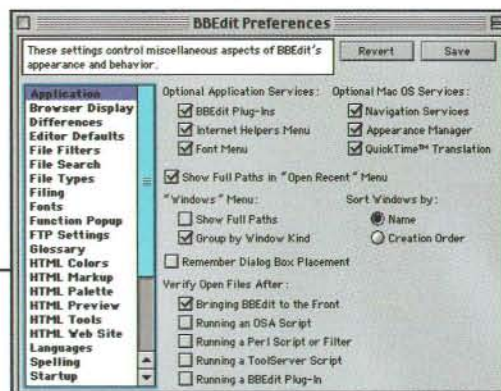
Watch me now. AppleScript recordability makes BBEdit even easier to automate.

it can't support Hebrew, Arabic, and other right-to-left languages.

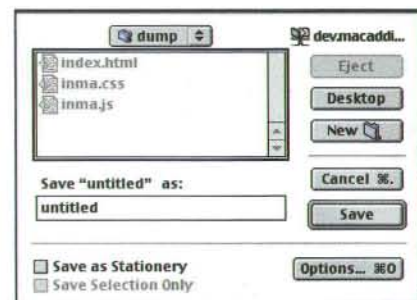
BBEdit has been AppleScript-able for years, and now that relationship has matured. In fact, any OSA (Open Scripting Architecture) language can manipulate BBEdit 6; you can use AppleScript (or MacPerl, Frontier, and so forth) to do everything from automating BBEdit's menu actions to creating documents from templates and raw text. You'll also rejoice to know that BBEdit is now AppleScript-recordable: Select Record from the AppleScript menu, do your business, then select Stop Recording and save the script.

We can't mention automation (or even BBEdit) without thinking of the text editor's real power—the mighty find-and-replace window. Bare Bones beefed up this cornerstone of multifile maintenance by extending the maximum length for the search string (the block of text for which you're searching and/or replacing) to a potentially limitless size. Version 6's finding and searching is not only stronger, it's also smarter. New user-definable filters turn the old shotgun-style multifile search into an operation of surgical-strike precision. Where you used to search by folder, you can now filter the folder's files by title, type, creator, creation and modification dates, label, and availability (Projector or CVS status). For even more control, you can add grep (regular expression) patterns to a multifile search filter.

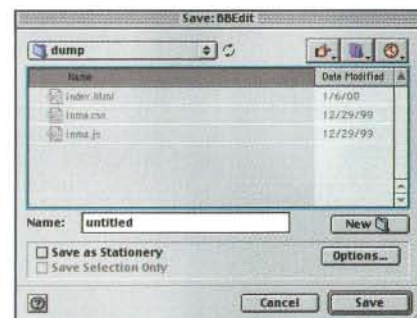
How could you make the king of its class even better? Add OS X support. Unfortunately, as of press time (the Mac OS X Public Beta stage), BBEdit 6.0 doesn't run under Mac OS X's native Carbon environment, though it purrs in OS X's Classic (Mac OS 9) layer. Bare Bones has promised a free upgrade to Carbonize BBEdit by the time Mac OS X ships. We'll be waiting.



Via BBEdit's detailed Preferences box...



...you can revert back to the old Standard File dialog boxes (pre-Mac OS 8.5)...



...if you think Mac OS Navigation Services suck.

BBEdit's cultlike core following will jump to upgrade to BBEdit 6.0 on principle alone. Of course, the promised OS X patch, improved multifile processing, extensibility, scripting, and language support don't hurt. Web scripting beginners who want to crank out complex pages full of the proverbial bells and whistles should think about investing in a high-end WYSIWYG tool, like Macromedia's Dreamweaver (see *Reviews*, April/00, p48)—which just so happens to ship with a fully integrated evaluation copy of BBEdit 6.0.—Niko Coucouvanis

good news: Unlimited string size for search and replace. Supports more languages (both computer and human). Better scripting support. Handles AppleScripts. Multiple clipboards.
bad news: Version 5.x's table builder is gone. Still no key command for save-as function.



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HP Photosmart 1218

hardware

Company: Hewlett-Packard

Contact: 800-752-0900, www.hp.com

Price: \$499 (SRP)

Requirements: Mac OS 8.6 or later, PowerMac G3 or G4 with built-in USB connection, 64MB of RAM, USB cable

At its best, this printer can create prints nearly indistinguishable from photographs.



PHOTOGRAPH BY AARON LAUER

The curvy, charcoal-gray, 17-by-17-inch HP Photosmart 1218 thankfully eschews the current trend toward iMac-style translucency. While this new USB printer cranks out beautiful, photo-quality color prints, it's \$500 price tag may limit its appeal for digital camera owners. Nevertheless, they'll appreciate its ability to print either from a Mac or directly from a digital camera's memory card. This is an outstanding printer if you have a digital camera.

The 1218 runs at the same speed as HP's DeskJet 990—it printed our black-and-white text pages at about 2 ppm (pages per minute), while an 8-by-10-inch color page finished in about 5. At its highest-quality setting and on HP's best glossy paper, the printer produced stunning, sharp, well-balanced color photographs with bright, natural colors, pleasing flesh tones, and neutral grays. We found the grain invisible without a good magnifying glass. Plain black text on quality inkjet paper actually looked sharper and clearer than on pages from our trusty 600-dpi LaserWriter, even at type sizes as small as 2 points.

Unlike HP's less expensive DeskJet line of inkjets, the 1218 can print directly from a digital camera's CompactFlash, Microdrive, or SmartMedia card, without a computer. After we printed an index sheet, the LCD display led us through selecting the photos and the number of copies we wanted to print, as well as cropping and adjusting brightness and color. We printed a few 4-by-6-inch snapshots using the 1218's special 4 by 6 tray—no need to unload your letter-size paper, just flip a lever to run off a few shots. Our results looked terrific, though automatic cropping can only select the center of a photo, which we never found useful. We then used the 1218 to download images from our card directly to our Mac—and to our delight it took less time than downloading from the camera.

Printing is a snap. We found the 1218's Print dialog box uncluttered and easy to navigate. The 1218 comes bundled with a two-sided printing module, a removable box that adds 2 1/2 inches to the depth of the unit. It's fun to watch: The 1218 prints one side of a page and—before the page drops into the tray—sucks it back in, flips it, and prints the second side. The HP Print Utility shows a visual estimate of the amount of remaining ink in the two cartridges (color and black).

HP advertises the infrared port for wireless printing as a PC-only feature, but the bundled CDs include a limited version of IsComplete's IrPrint, Palm software that allows a Palm OS handheld to print pages

using its infrared port. After installing the software, we printed out Palm calendar dates and memos without a hitch.

Digital camera enthusiasts should consider the HP Photosmart 1218. For about a 25 percent higher price than the similar DeskJet 990, the 1218 offers the same ease of use and stunning color output, while adding digital camera-friendly features. —Joseph O. Holmes

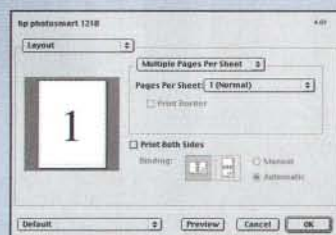
good news: Top-quality photo printing. Razor-sharp text output. Convenient 4-by-6-inch photo tray.
bad news: No serial port. Pricey if you don't need the digital camera features.



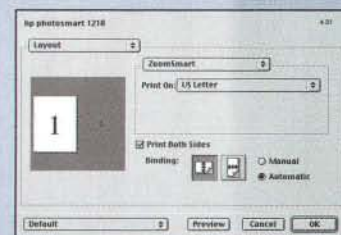
Laying It Out

The Photosmart 1218's Print dialog box allows you to print using some unorthodox layouts. Here's a guide.

THE FOUR LAYOUTS:



The multiple pages panel lets you print several reduced pages on a single page—saves paper, increases eyestrain.



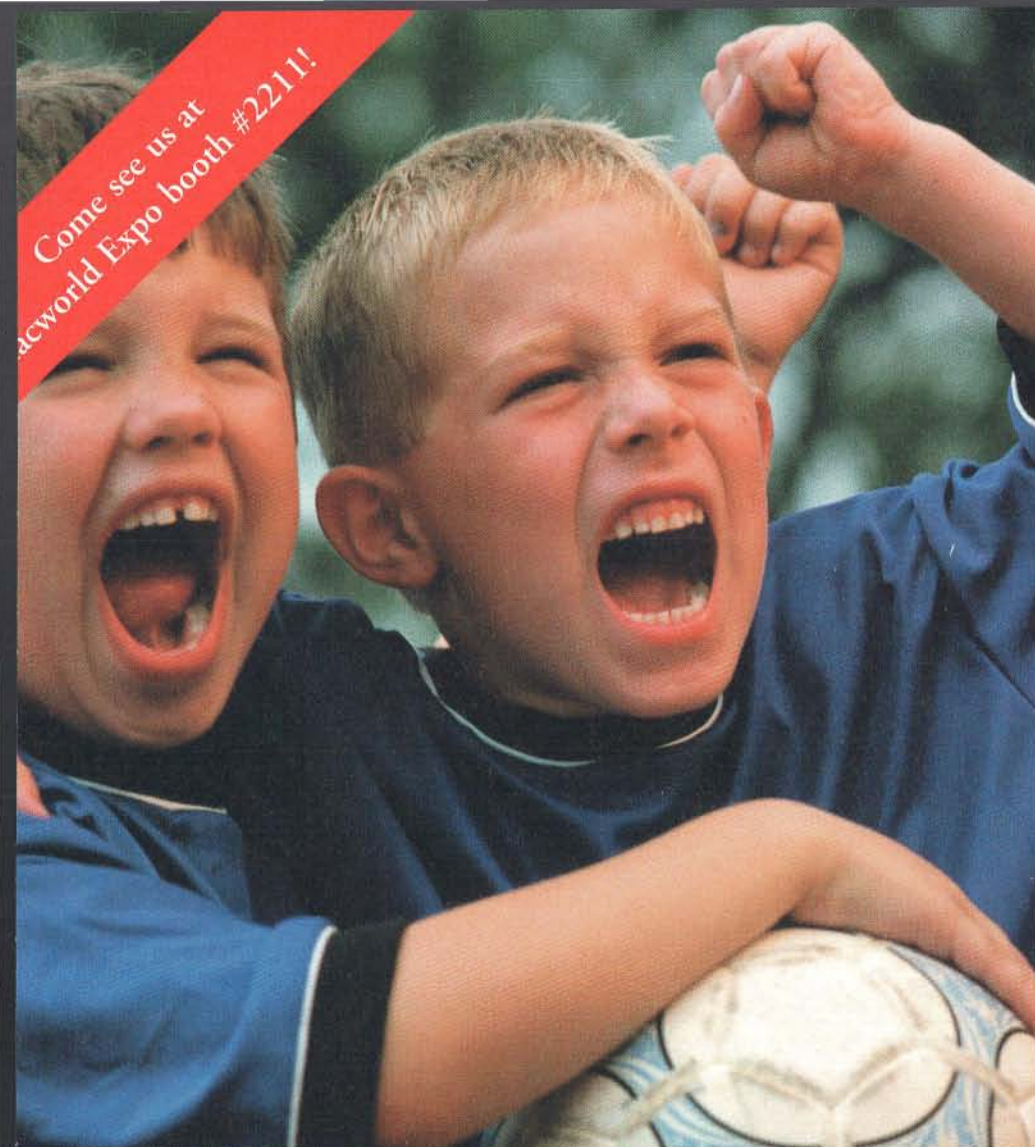
ZoomSmart tries to alter the current document to fit a different paper size (4-by-6-inch photos, for example).



In Booklet mode, the HP Photosmart 1218 uses its duplex unit to print little folding booklets.



If you want to make a giant poster, use the tiling options to enlarge each dimension of the printout two, three, or four times.



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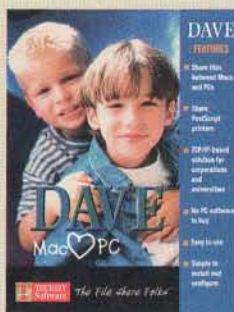
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Brother MFC-7400C

hardware

Company: Brother

Contact: 888-879-3232 or 908-704-1700, www.brother.com

Price: \$399 (SRP)

Requirements: Power Macintosh G3 or faster, Mac OS 8.1 or later, 15MB of free hard disk space, available USB port

Lots of features, but only two work with the Mac.



PHOTOGRAPH BY AARON LAUER

The promise of a single device that serves many different functions for one low price is always attractive. Sadly, the Brother MFC-7400C, an all-in-one printer, scanner, fax, and photocopier, doesn't live up to that promise. While it performs some of these roles adequately, it doesn't do any one of them very well—and its photo-capture features don't work at all on the Macintosh.

The MFC-7400C prints text and business graphics satisfactorily, but will disappoint those looking for higher-quality graphics. Brother claims the device has a printing speed of up to 12 ppm. While this is true when you set the printer to Draft mode, 4 to 6 ppm is more realistic for a full page of legible text at about 3 points (in Normal mode) or even 2 points (in Fine mode).

The MFC-7400C simply didn't meet our standards for photographic printing. In our test image (an outdoor scene including regions of strongly saturated color, muted colors, and gray scale), the device yielded fairly poor color-matching and saturation. On glossy paper, faint but annoying bands appeared (we were unable to resolve the problem by cleaning the jet's nozzles).

With flatbed scanners hovering around \$100, we'd nearly forgotten just how awful feed-through scanners were. The MFC-7400's scans aren't very sharp and tend to wind up slightly askew. The included software permits just basic correction of brightness and contrast. To add insult to injury, the



The MFC-7400C's banding problem (shown in this enlargement) makes the printer difficult to use as a photographic printer.

scanning buttons work only with the PC driver. The scanner is passable for OCR use (and, of course, as part of the stand-alone fax machine), but that's about it.

Since the device doesn't implement its SmartMedia, CompactFlash, and Composite Video features for the Macintosh platform, you can use them only to send images from your digital camera directly to the printer—and the MFC-7400C doesn't produce photo-quality prints, which limits this feature's usefulness. Similarly, it doesn't implement the fax service for the Mac—while the MFC-7400C is a fine stand-alone fax machine, to send a fax from your Mac you must first print out the document, then feed the printout back into the machine.

The MFC-7400C works well as a standalone fax machine and photocopier. For purposes of sending and receiving faxes, the scanner and printer are perfectly adequate and perform nicely. Printing from the composite video input or from the digital camera cards also works, although for digital camera images the low quality of the printer again becomes an issue.

As a standalone fax machine, the MFC-7400C might be quite useful to a small office or a freelancer that needs a printer, scanner, fax machine, and photocopier but can't afford either the cost or desk space for separate devices. Unfortunately, as a Macintosh peripheral the device is little more than a low-end printer tied to a bottom-of-the-barrel scanner. Anyone looking for a scanner or photo printer should look elsewhere—you'll find a multitude of cheaper devices that perform the same functions far better.—*Rich Pizor*

good news: Prints crisp text, even at small point sizes.

bad news: Mediocre scan quality. Prints complex graphics poorly. Tends to scan crookedly. Many functions not available to Mac users.



The MFC-7400C's Scanning at a Glance

Optical Resolution: 1200 by 2400 dpi

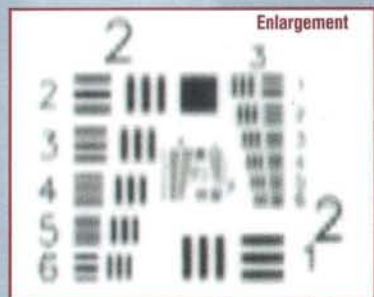
Color Depth: 42 bits (24-bit output)

Interface: USB

Power Required: No

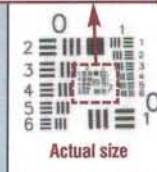
Time to scan a 4-by-6-inch photograph at the standard 8 bits per channel RGB

72 dpi	n/a
300 dpi	39 seconds
1200 dpi	4 minutes, 48 seconds
2400 dpi	14 minutes, 13 seconds



Our United States Air Force test target (standard for testing optics) consists of an inward spiral of horizontal and vertical

lines; you can judge the accuracy of a scanner by determining at what point the lines blur together. Each piece of the spiral is numbered; with the naked eye you can barely see group two (shown actual size at bottom right). As you can see, the MFC-7400C's scanner can't even get a decent scan of detail that's visible to the unaided eye. The result? Fuzzy, less-than-sharp scans even without any enlargement.





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CanoScan N1220U

hardware

Company: Canon

Contact: 800-652-2666, www.canoscan.com

Price: \$199.95 (SRP)

Requirements: G3 processor or faster, Mac OS 8.5 or later, 32MB of RAM (64MB recommended), 20MB of free hard disk space, USB port

You know how some pieces of hardware strike you as *so cool* from the very first moment you set eyes upon them? As Mac users, we usually have good luck when it comes to cool hardware—with the Cube, Cinema Display, and G4, we're hardly short of eyeball candy.

At just under \$200, the CanoScan N1220U might tempt you to buy it solely for the sake of its good looks, ignoring the possibility of inferior performance. Fear not, scanner seekers—in this case, substance meets style, and this CanoScan sure can scan.

When we reviewed the CanoScan N656U (*Reviews*, Oct/00, p54), its high-quality scans, sleek shape, and small size earned it a *Freakin' Awesome*. The N1220U is exactly the same machine with one difference—four times the resolution! Oh, and the little button on the front is silver, not purple. Two! Two differences—four times the resolution, a silver button. Oh, and it costs \$70 more. Three differences! We'll stop at three to avoid unpleasant legal issues with Monty Python.

The N1220U's 1200-by-2400-dpi resolution is superb—just fine for the average desktop publisher or graphic artist.



These are the *warmer* faces we mention. Recognize anyone?



Captain! The USB CanoScan any faster!

The 8.5-by-11.7-inch scanning area will satisfy the average user's needs, but said graphic professionals might find it too tight. As you'd expect from a 1,200-by-2,400-dpi scanner, it handles line art with crisp edges, nearly devoid of pixilation. The N1220U also takes outstanding color scans, although (as with most scanners) the standard settings for photographs produce rather dark images. For example, our scan of an indoor close-up of two faces produced an image that came out a bit warmer and darker than the original. You'll have to either spend some time tweaking the settings or make the necessary changes in a photo-editing program—several ship with the scanner, including ArcSoft PhotoStudio and Adobe Photoshop LE 5.0. Canon also bundles ArcSoft's photo-cataloguing software, PhotoBase, and the inevitable OCR package (in this case, Caere's OmniPage 8 SE).

The N1220U shares its biggest shortcoming with other USB scanners—pumping large amounts of data through that slow 12-Mbps USB connection takes a lot of time. This isn't a terrible problem, but we can't help thinking what potential this scanner would have with a 400-Mbps FireWire connection—a 6-by-3-inch color photo at 300 dpi took 30 seconds to scan on the N1220U, for example, compared to half that time on the FireWire-equipped Umax Astra 6400.

With the myriad of scanners on the market, choosing just one can be a torturous prospect. The Canon N1220U offers good performance, looks, and speed for a scanner in this price range. You won't go wrong with this choice.—Chris Imlay

good news: Great performance within an even greater case.
bad news: USB is quite slow.



The CanoScan N1220U at a Glance

Optical Resolution: 1200 by 2400 dpi

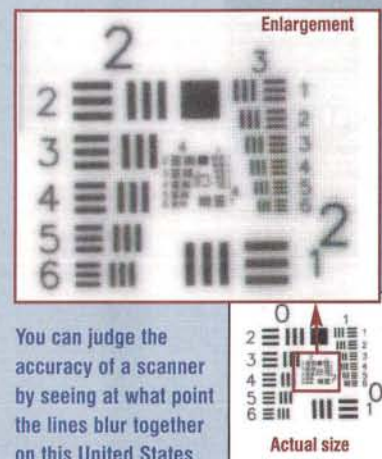
Color Depth: 42 bits (24-bit output)

Interface: USB

Power Required: No

Time to scan a 4-by-6-inch photograph at the standard 8 bits per channel RGB

72 dpi	16 seconds
300 dpi	37 seconds
1200 dpi	4 minutes, 13 seconds
2400 dpi	45 minutes, 18 seconds



You can judge the accuracy of a scanner by seeing at what point the lines blur together on this United States

Air Force test target (standard for testing optics). At actual size, the naked eye can barely make out the target's first inner square (the region inside red square). But as the enlargement shows, the N1220U's 1200 by 2400 resolution distinguishes between lines that the human eye cannot—which results in a crisper printed image.



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Umax Astra 6400

hardware

Company: Umax

Contact: 800-232-8629, www.umax.com

Price: \$250 (SRP)

Requirements: G3 or faster, Mac OS 9, 64MB of RAM, 250MB of free hard disk space, CD-ROM, FireWire support

We feel the need, the need for speed! Fortunately, that yellow logo on the front is no hood ornament—it's the reason this puppy scans much faster than any other scanner we reviewed this month.



PHOTOGRAPH BY AARON LAUER

Don't let the snazzy graphite lid atop the Astra's bland plastic case distract you from the far more important FireWire logo on the front. While other scanners squeeze data through paltry USB connections, the Astra 6400 pipes images through the same fat FireWire cable your Mac uses to import digital video. The result: an affordable FireWire scanner (the first we've seen) that's more than twice as fast as its USB-based competition.



We'll spare you the bear puns and just say that the Astra 6400 brought out fine details in even our most amateurish snapshots.

The 6400 shares a few high and low points with its relatives in the Astra series. On the minus side, the scanner lacks an on/off switch, and the case and lid feel as flimsy as ever. On the plus side, installation is flawless, customizable buttons at the front of the scanner allow one-touch scanning and copying, and the 6400 includes Umax's sterling VistaScan software. VistaScan's beginner mode lets novices scan with a single click, while the advanced mode offers powerful image-tweaking features, such as filters and level controls, in a pleasantly efficient interface that lacks the clutter of a ScanWizard. We only wish Umax had included a button on

the scanner to turn its lamp on and off, instead of forcing us to use a Control Strip module.

In our tests, the 6400's image quality was nearly perfect. Scans at resolutions as low as 150 dpi boasted sharp details and vivid colors, whether we were scanning family snapshots, magazine photos, line art, or text pages for OCR. Even when magnified 200 percent, images displayed little or no pixilation. However, Umax's automated image-correction feature sometimes went overboard on color saturation and brightness.

Oddly enough, the Astra 6400 was slightly slower when processing low-resolution images than some USB scanners we've tested. At 300 dpi, an ordinary 4-by-6-inch photograph took 20 seconds—4 seconds longer than a previous test we ran with the USB Astra 3400.

But when it came to high-resolution images, the 6400 practically roared. At an extremely high resolution (2,400 dpi), a 4-by-6-inch photograph scanned in just under 4 minutes. The USB model took more than 9 minutes to do the same job.

The Astra 6400's \$250 price tag may seem steep compared to the numerous USB models on the market in the \$99 to \$150 price range, but it's actually one of the least expensive FireWire scanners available. While the 6400 isn't the best choice for average users (for simple, low-resolution scans, a cheap USB scanner would be fine), artists and photographers with high-resolution scanning needs will definitely want to ditch their USB cables and start working in the fast lane.

—Nathan Alderman

good news: Speedy scans. Crisp images. Great software.
bad news: More expensive than USB scanners. Uneven performance.

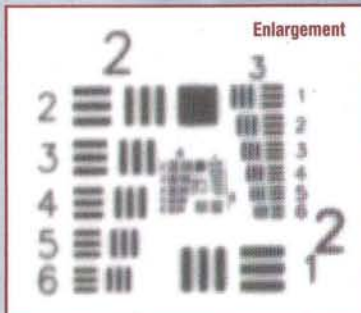


The Umax Astra 6400 at a Glance

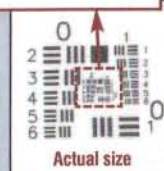
Optical Resolution: 600 by 1,200 dpi
Color Depth: 42 bits
Interface: FireWire
Power Required: Yes

Time to scan a 4-by-6-inch photograph at the standard 8 bits per channel RGB

72 dpi	12 seconds
300 dpi	20 seconds
1,200 dpi	1 minute, 57 seconds
2,400 dpi	3 minutes, 56 seconds



You can judge the accuracy of a scanner by seeing at what point the lines blur together on this United States Air Force test target



(standard for testing optics). At actual size, the naked eye can barely make out the target's first inner square (the region inside the red square). But as the enlargement shows, The Astra 6400's 600 by 1200 resolution works well for most images, so long as you don't try to enlarge them too much. This scanner's strength is speed not high-end graphics.

The Freedom of FireWire

With VST's industry leading line of ultra-portable FireWire peripherals, you've got the reliability, speed and connectivity to do what you want, where you want.

From high-performance, ultra-thin hard drives that fit in your hand, to the full height hard drives that stack on your desktop, VST gives you the power you need to keep going. From FireWire CD-R/W drives to Zip drives, our products will enhance your productivity whatever you do, wherever you are.

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powerplay

The wages of Sin are death—if you're a lousy gamer.

Get Ready to Rumble

Another Great Gaming Season—Can You Stand It?



Find a copy of
Runestone
1.0.1 on
The Disc.

Since the bad old days of 1996 and 1997, gaming on the Mac has been on the rebound—and the twitchy among us have never been happier. This year's upcoming games list (most of them available just in time for the holiday buying season) is pretty darned impressive: not just for one or two blockbuster releases, but rather for the sheer *quantity* of those releases. Here's a look at some of the games you can expect to see over the next few months.

What's Coming Soon

These upcoming titles should come out within a couple of weeks after you read this article—if not sooner.

- **DRIVER** (MacSoft)—Finally, this role-playing driving game makes it to the streets. You play the role of an undercover cop, posing as a driver for the mob. Expect lots of burning-rubber action on realistic New York, Miami, and San Francisco streets.

- **JEOPARDY** (MacSoft)—The answer is Jeopardy. The question: What is the hottest quiz-show-based game to hit the Mac?

- **LINKS LS 2000** (MacSoft)—Oh, yeah—it's time to hit the links and shank those balls into the rough with this update on classic Mac golf action.

- **MONOPOLY** (MacSoft)—Y'know, hotels on Baltic Avenue and Mediterranean Avenue can be surprisingly effective in decimating your opponents, especially when rendered in eye-popping 3D.

- **RUNE** (Human Head Studios)—Ever get the bloodthirsty urge to become a Viking and slaughter your enemies? Rune will let you satisfy it without getting arrested.

- **STAR TREK VOYAGER: ELITE FORCE** (Aspyr)—A new first-person shooter based on the Quake engine, Star Trek Voyager: Elite Force lets you try out even more fancy Federation weaponry against the Borg and other assorted baddies.

- **RAINBOW SIX: ROGUE SPEAR** (MacSoft)—Following up on the release of Rainbow Six, based on Tom Clancy's novel, MacSoft is offering a Mac version of Rogue Spear, including the Urban Ops mission pack.



Brrr—that's some chilly weather for weeding out terrorists in Rogue Spear, the follow-up game to Rainbow Six.

- **LIVIN' LARGE** (Aspyr)—That's right, Sim torturers: Aspyr is giving you a whole new set of characters, furniture, houses, and all kinds of other stuff to add to your Sims experience. It's up to you to misuse it.

What's on the Horizon

These games are on their way in the next couple of months—we can only drool in anticipation.

- **DIABLO II EXPANSION PACK** (Blizzard)—Bad news for those who wasted countless hours on Diablo II: You'll now have the opportunity to waste even *more* time when the Diablo II Expansion Pack comes out in the first half of 2001. It features more character classes, new monsters, weapons, and increased Stash storage.
- **ESCAPE FROM MONKEY ISLAND** (Aspyr)—Aspyr has landed the fourth vessel in this tongue-in-cheek Lucas Arts adventure series. This time it has a pirate twist, done in 3D.
- **NEED FOR SPEED: PORSCHE UNLEASHED** (Aspyr)—Fans of famous Tom Cruise movie lines (careful—you'll date yourself, and not in a good way), as well as closet Porsche-lovers, will appreciate the title of this mission-based racing game, complete with police cars and crashes.
- **SIM THEME PARK** (Aspyr)—Wannabe Walt Disneys can fulfill their own theme park aspirations with this simulation program—minus the whole Disney copyright infringement, of course.
- **TOMB RAIDER: CHRONICLES** (Aspyr)—Take Lara Croft on four new adventures involving a German submarine, Roman ruins, and a rooftop landscape as you search for four artifacts.
- **WARCRAFT III** (Blizzard)—Although it's been a while since we've seen anything involving our good friends the humans and the Orcs, they're back for another battle royal in this luscious adventure. It's coming, but not terribly soon.
- **WORMS ARMAGEDDON** (MacSoft)—Worms fans will have a reason to get off their bellies and cheer when this update to the classic hits. You control an army of heavily armed nematodes in a quest to wipe out your enemies.—DR

It's the great spaceship graveyard—where the *Star Trek Voyager* TV series is destined to find a home, and where you'll play scenes from Elite Force.



It's tough to take a shot from behind the leader board—the cool thing about Links LS 2000 is that it *has* a leader board you can hide behind.

Better hope there's no fire hydrant nearby—unless someone else happens to own Vermont Avenue.



TITLE DEED

VERMONT AVE.

RENT \$6.

With 1 House \$30

With 2 Houses 90

With 3 Houses 270

With 4 Houses 400

With HOTEL \$500

Mortgage Value \$50

House cost \$50 each

Hotels \$50 each (includes

if a owner who buy the title for new

about money, the first 10 properties are

properties can be used group

© Monopoly.com

Sin

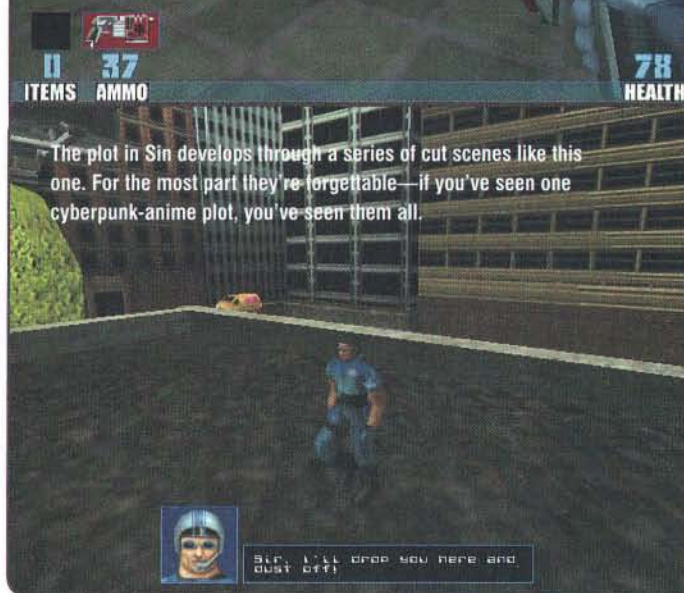
A Second-Millennium Hit Makes Its Belated Appearance on the Mac

If one can find a silver lining in the Mac gaming drought of 1997 to 1998, it's that a lot of companies built up a large archive of good games, and they're finally porting them to the Mac platform (now that they no longer consider the continued existence of the Macintosh a legend akin to Santa Claus, alien abductions, and the healing powers of magnets). Yesterday's shortage has become today's surfeit. *Sin*, a first-person plot-based shooter (a genre we haven't seen since the death of the *Marathon* series), is among the golden oldies that are finally coming over.

Sin presents us with yet another gritty, cyberpunk future (we've turned 180 degrees from the days when we found the grimy spaceships of *Star Wars* remarkable; these days bright, optimistic futures seem astonishingly rare unless Paramount licenses them). As a private police officer, you must battle, reason, and occasionally sneak your way through a plot that does justice to the anime tradition that inspired it. Since you're a police officer, not everyone is a legitimate target—along with the villains, you'll encounter a number of innocent bystanders, whom you should do your utmost to protect. That's about as far as the whole cop theme goes—officers in this future don't seem to sweat such niceties as the Miranda law.

For a *Quake II*-based game, *Sin* is remarkably detailed and entertaining (although you'd never mistake it for *Quake 3 Arena* or *Unreal Tournament*). We couldn't obtain a final version of *Sin* by press time; watch for a full review in a future issue.—IS

You have the right to remain dead. If you choose to waive this right—well, too bad.



The plot in *Sin* develops through a series of cut scenes like this one. For the most part they're forgettable—if you've seen one cyberpunk-anime plot, you've seen them all.

Runestone Rocks

This Simple Game Will Steal Hours of Your Life

Sometimes the simplest of concepts makes for great gaming. *Runestone*, a \$15 game from Divinity Software (www.divinitysw.com), is a basic four-in-a-row game, but it'll keep you entertained for hours. In this game, four players place stones on a big checkerboardlike playing field, one at a time, anywhere they like on the board. Each stone has three characteristics: a symbol on the front, a symbol color, and a stone color. If four stones in a row (vertically, horizontally, or diagonally) share any one of these characteristics, then the player who laid down the last stone in the series gets credit for what the game calls a *natural match*.

That's it as far as gameplay goes. But that's just the start of things in terms of strategy. Even though the game has few rules, they're just enough to give you endless playing options—and to keep things interesting far longer than you'd expect.—DR

All those letters, colors, and symbols mean something—put four of the same symbols, stone colors, or symbol colors in a row to get a *natural match*. The largest number of matches wins.



Screen Shot of the Month

We always appreciate using the wrong weapon for the job (as long as it's a *big* weapon), so if you have a great shot of that (or of anything else game-related), send it our way at letters@macaddict.com. We'll consider it for this slot—or at least we'll enjoy your spectacular gaming moment.



Artist's Statement

I smoked that guy.—Steffen Bergen

how to

Where we answer all those questions you didn't ask.

Find Internet Explorer's Hidden Tricks

by Joseph O. Holmes

WHAT YOU'LL NEED

- Internet Explorer 5.0

If you actually kept track, you'd probably be shocked to discover that you spend a *lot* of time surfing the Web. It never seems like much—a quick scan of the MacAddict Forums here, a check of your stock prices there—but before you know it, you're spending more time surfing the Web each day than you previously spent exercising in any given month.

Luckily for you, Internet Explorer is chock full of hidden features to speed up your surfing, so you can spend a bit more time each day moving muscles that aren't connected to your fingers. You activate some features by holding down the Control key, others by holding down the Command key, and still others with the mouse button. Master these hidden features and you'll find Web surfing both easier and faster. You probably won't spend less time on the Internet, but you'll cover more ground. Watch and learn, grasshopper.

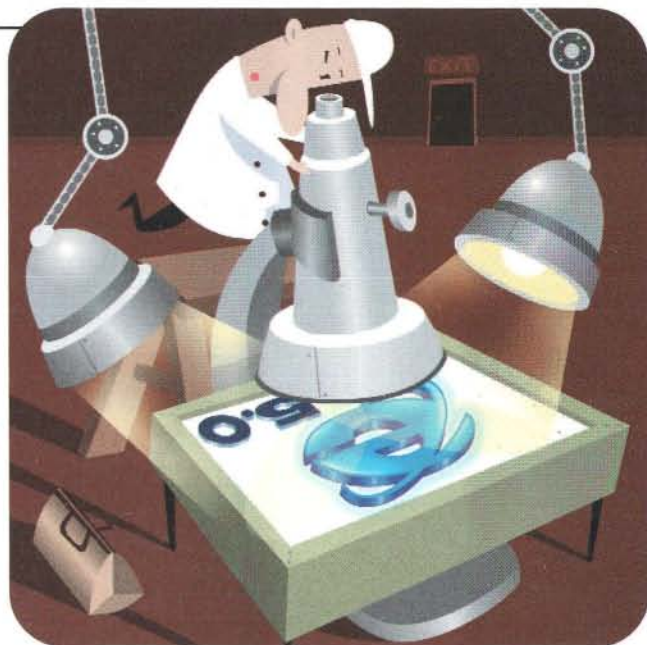


ILLUSTRATION BY SIMON SHAW



This stuff's for the pros.



It'll take some effort, but you can do it.



The fundamentals, if you will.



Find Internet Explorer 5 on The Disc.

INTERFACE SPEEDUPS

1 The Button Bar

You can rearrange your button bar (the line of buttons at the top of the IE window) by Command-dragging the buttons where you want them. If you want to delete a button entirely, just drag it to the Trash.

But that's not the end of the available customization options. To get started, Control-click anywhere in the bar. From the pop-up menu, you can set the color scheme, delete a button, or switch between icons and text. You can also select Customize to add other buttons that launch Sherlock, enlarge and shrink all the fonts, add the current page to the Scrapbook, and display the page's HTML source code.



Control-click the button bar to bring up this contextual menu—it lets you customize to your heart's content.

The Map to the Features

Microsoft has riddled the simple-looking Internet Explorer interface with a host of hidden tricks to speed up your browsing. Here's where you can find some of the best techniques.



Here's your treasure map for the Internet Explorer interface.

2 Other Paths

If you Command-click any window's title bar, a complete list of all the directories that enclose the page you're looking at will appear. For example, if you're visiting www.macaddict.com/community/forums/, clicking the title bar will give you quick access to the community page and the site's home page.



Just as you would do in the Finder, Command-click the title bar to visit the enclosing sites.

3 Recent Sites

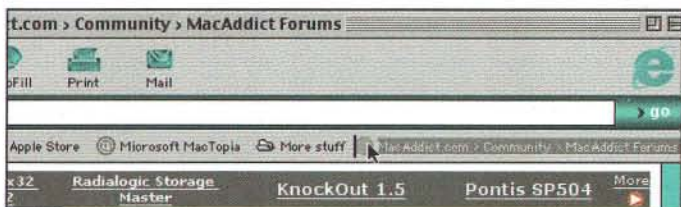
If you click and hold the Back button, a list of the sites you've recently visited will appear. Moreover, if you've repeatedly clicked the Back button, you can click and hold down the Forward button to get a menu showing all the pages between the current page and the one where you started clicking Back.



If you'd rather not get your finger exercise by repeatedly clicking Back or Forward, hold down the mouse button for a rapid-transit menu.

4 Drag the @

The @ (at-sign) next to the URL in the Address bar isn't there for decoration—it's called a Temporary Favorite, and represents the full URL. Drag the symbol into another application to paste in the URL, or drag it to the desktop to create a shortcut to that Web page. You can also drag it to the Favorites Bar to create a button that'll take you directly to the URL or to one of the side tabs to save the current page in the Scrapbook, Page Holder, or Favorites. In OS X, you can also drag @ symbols to the Dock.



You can use the @ to stick the URL on the desktop, in the Favorites window, and in other documents—it's a very useful little symbol.

5 Hide It All

This unassuming little arrow replaces the entire navigation interface with a secondary one that will appeal to fans of minimalism, as well as anyone who has a monitor that can't display 1024 by 768.



If you're stuck with a 640 by 480 or 800 by 600 screen, click the arrows. You can't afford the real estate for all those bars, palettes, and doohickies.

6 The Favorites Bar

Many Explorer users ignore the Favorites bar, finding it little more than an occasional nuisance when they inadvertently click it. While basic maintenance is quite simple (drag @ icons to the bar to add them, to the Trash to remove them, and so on), you can do a lot more with this feature.

For serious fiddling with the Favorites bar, click the Favorites tab at the left side of the window to reveal the pane listing all your favorite sites. Look for the Toolbar Favorites folder, which contains the items that appear in the Favorites bar. You can add folders to the bar by choosing New Folder from the Organize submenu at the top of the panel. A folder in the Favorites bar becomes a pop-up menu—so you can make a fully hierarchical Favorites bar.



Here they are—your beloved sites, all ready for organization.

Useful (or at Least Random) Keyboard Shortcuts

Sometime over the last 20 years, Microsoft developed the odd habit of giving just about every key combination a function—be it useful, useless, or simply bizarre. Here are some of our favorites.

- Selects all text in the Address bar.
- Adds "http://www." to an empty Address bar.
- Fills out forms in Web pages (with contents you determine in Forms Auto-Fill Preferences).
- Removes Auto-fill info from Web forms.
- Cycles through all open windows.
- Shows or hides Explorer Bar.
- Collapses or reveals all toolbars.
- Back. Forward.
- Back. Forward.
- Top of page.
- Bottom of page.

MORE IE ODDITIES

Beyond simple interface tricks, Internet Explorer sports some strange and useful features you might never encounter in the course

of your daily browsing. Learn these features well—you never know when they might suddenly come in handy.

1 Browse the Hard Drives

Type `file:///` in Internet Explorer's Address bar and—much as in Windows 98—you'll get a hierarchical view of your local and networked volumes. Treat these as hyperlinks—click any of them to go into the volume or folder they represent. If you come across a HTML file, Internet Explorer will display the file properly, of course. This trick can come in handy if someone gives you a heap o' documentation in HTML format—it's a lot easier to simply browse to the various documentation pages than drag them individually into the browser window.



Granted, it's ugly—but when you have to look through piles of HTML, this hierarchical view can be a godsend.

2 Stick It in the Scrapbook

Bookmarking a page is useless for keeping track of a story located on a Web page that changes on a regular basis—by the time you return to your bookmark, all the content will have transformed. To save the contents of news sites, auctions, and bulletin boards, use the Scrapbook, which saves copies that won't change over time. To copy a page into the Scrapbook, first click the Scrapbook tab, then click the Add button. If you're in a hurry, you can just drag the Temporary Favorite (the @ next to the URL in the Address bar) to the Scrapbook tab.

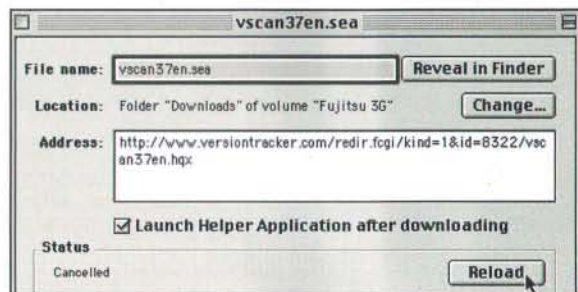


When you just know you'll always want that particular story from *The Onion*—or, better yet, from our Web site—saving it in the Scrapbook is the way to go.

3 Download Manager Fun

When you're dealing with a less-than-reliable site (the kind that appears to be field-testing the networking capabilities of chewing-gum wrappers) you frequently encounter interrupted downloads. If your download abruptly halts, double-click the file's icon in the Download Manager window. In the dialog box that appears, click the Reload button. If you're lucky and you had a big enough browser cache to hold the partially downloaded file, the download will resume where it left off.

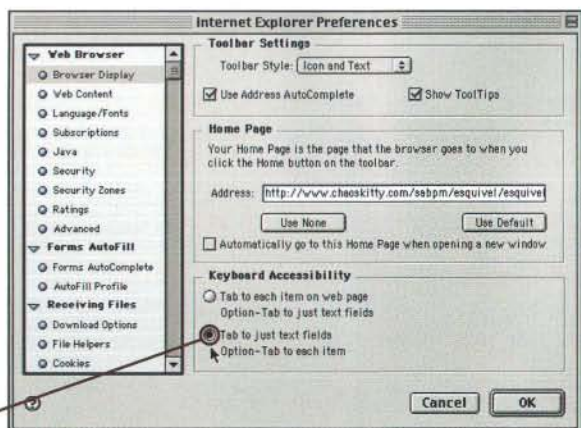
While resuming downloads is certainly the single most useful feature available in the Download Manager, it's only the tip of the iceberg—you can also rename files as they download, open file folders in the Finder, change the download folder, or even copy a file's URL.



When you've got those "It quit with only half a meg to go" blues, double-clicking the Download Manager might cheer you up.

4 Text-Box Tabbing

In the previous version of Internet Explorer, the Tab key moved through all text boxes (the places on a Web page where you could enter text) on the current page. In version 5.0, however, you can use the Tab key to select hyperlinks one at a time, cycling through every hyperlink on your page. Since that's almost never what you really want to do, Microsoft kindly makes it easy to cycle through the current page's text boxes instead—just hold down the Option key while pressing Tab. If you'd rather return permanently to the traditional Mac OS behavior—where pressing Tab takes you between text fields instead of between links—choose Preferences from the Edit menu, click the Browser Display button, and click the Tab To Just Text Fields radio button.



When you click this radio button, the Tab key will revert to the usual Mac OS behavior—it'll skip between text fields, not links.

Joseph Holmes's quest to outlast David Reynolds on the masthead just suffered a setback. Stay tuned.


Great Galloping Rhinos!


A Drag & Drop Utility for CD-RW that Actually Works!




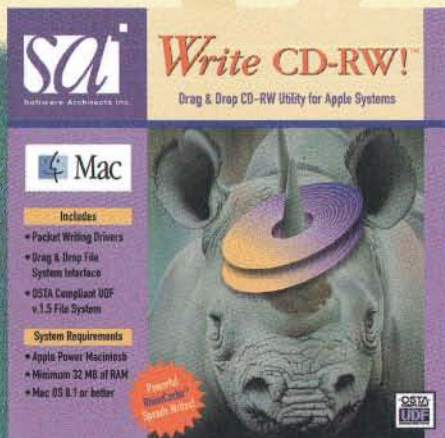
Announcing **WriteCD-RW!**™ for Apple™ PowerMac and iMac systems.


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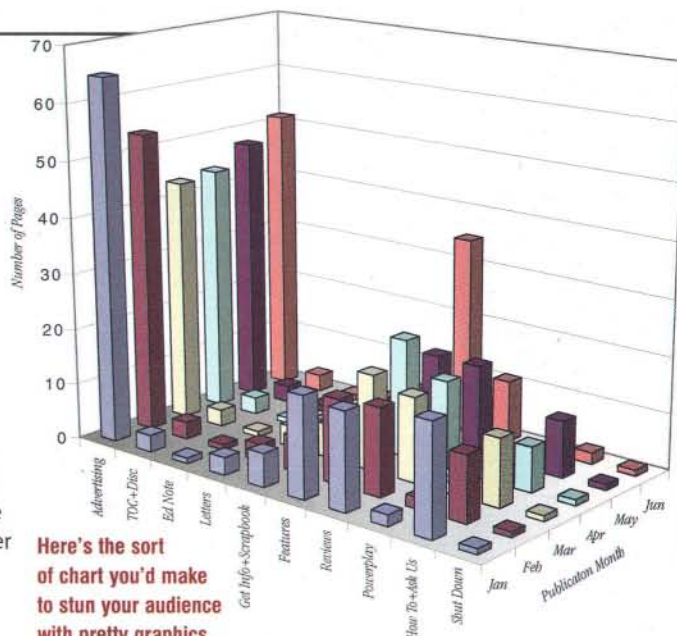
Make Excel Charts That Don't Suck by Ian Sammis

WHAT YOU'LL NEED

- Microsoft Excel 2001
- Data that needs plotting
- Loose morals (optional)

If you work with numbers, it's a better than even bet that at one point or another you've been called upon to make a chart. A chart is an odd sort of beast—as an artistic representation of a set of numbers, a good chart can convey a message with accuracy, whether it be “Taxes are too high” or (as is the case with the vast majority of charts) “We need more money!”. Considering that people with good charts often seem to acquire large sums of money, it's worth putting a bit of effort into chart creation.

Unfortunately, many charts develop minds of their own, and may interrupt your presentation with quite a different message: “This jerk used Excel to make me! Badly! I'm embarrassed to even appear! Hide me!” Combined with the PowerPoint-induced doze (a topic for another time), this tendency can be deadly. To save you from that sort of embarrassment, we thought we'd give you the basics of designing charts so that, at the very least, you won't want to get them off the screen fast, before anyone gets a close look (or falls asleep).



Here's the sort of chart you'd make to stun your audience with pretty graphics. It's lovely, but very difficult to read.

What Are All These Chart Types For?

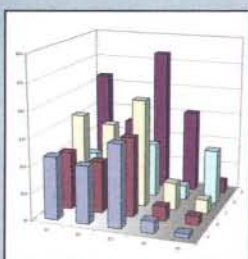
Although Excel sports more than 50 types of charts, they fall into a few broad categories. The type of chart you use will

BAR CHART

SUBTYPES: Bar chart, column chart, stock chart, cylinder chart, cone chart, pyramid chart.

GOOD USES: Bar charts let you plot small amounts of data clearly and accurately.

EVIL USES: If you're feeling truly evil, use a 3D bar chart viewed from a perspective that makes it impossible to compare anything in it.

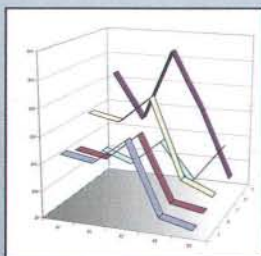


LINE CHART

SUBTYPES: Line chart, area chart, surface chart.

GOOD USES: If you've got a lot of data, a line chart makes trends immediately obvious.

EVIL USES: If you don't have much data, a line chart creates a trend out of whole cloth. If your data varies quite a bit from point to point, a line chart can also turn an obvious long-term trend into a confusing squiggle—this can come in quite handy if the long-term trend isn't in the direction you'd like!



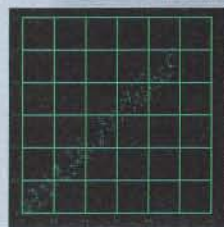
determine what parts of your data you highlight and hide, so you should put some thought into it. Here are the basic types.

SCATTER CHART

SUBTYPES: Scatter chart, radar chart, bubble chart.

GOOD USES: When used by the moral, a scatter chart is an accurate representation of a set of data. Scientists and engineers are the main users of these plots.

EVIL USES: When used by the amoral, scatter charts can turn a trend into a confusing snowstorm of data.

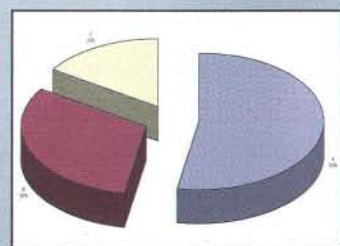


PIE CHART

SUBTYPES: Pie chart, doughnut chart.

GOOD USES: A pie chart is an extremely accurate way to represent the relative sizes of different parts of a whole (for example, the results of a political poll).

EVIL USES: Plotting repeated pie charts lets you appear to present a lot of data without revealing overall trends—useful if the overall trends aren't so good.

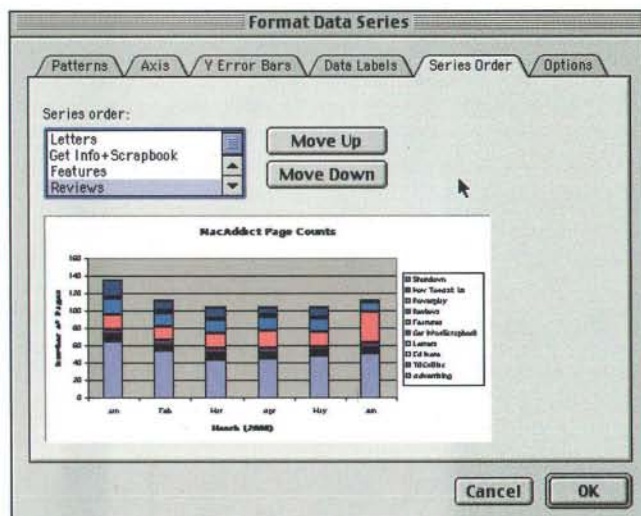


5 **Reorder the Data**

Many people take an unfortunate "My work is done" attitude at this point—a guaranteed recipe for a chart that puts people to sleep. Everyone's seen charts like this, with Geneva labels and a gray background—these announce to the world that you were too lazy to do any more work than was strictly required. Let's see what we can do to make this chart a bit more interesting.

To start with, we need to reorder the data more elegantly. Several of the sections are always the same length (for example, the magazine always has two pages for the table of contents, one page for The Disc, and one page for the *Editor's Note*). If we moved those sections to the bottom of the chart, we could more easily compare the sections that change dramatically.

To reorder the series, double-click on a data element (a column, bar, point, line, or whatever you chose back in step one to represent your data). This opens the Format Data Series dialog box. Click the Series Order tab, then use the Move Up and Move Down buttons to move the series into the desired order.

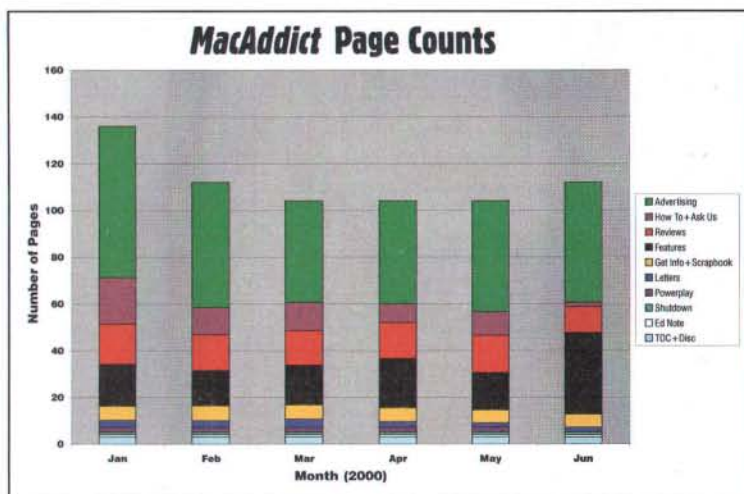


In a stacked column chart like this one, you want to put the pieces that don't vary at the very bottom of the chart.

6 **Choose Better Fonts**

Whatever you do, don't use the default Geneva for your chart's text. First of all, Geneva is a singularly ugly font for almost any purpose beyond the one its designers intended: presenting words in small sizes on a Macintosh's screen. Second, Geneva isn't too stylin'—it's patterned after Helvetica, which hasn't been a happening font since bell bottoms went out of fashion. Worst of all, every chart by every bozo that doesn't know how to use Excel ends up in Geneva.

Choose a font that reflects your audience's taste. Scientists and engineers, for example, often like tried-and-true fonts such as Times and Tekton; conservative institutions—banks, for example—may prefer solid Garamonds; while edgier technology- or arts-oriented companies might like avant-garde sans serif fonts. (If you go for a sans-serif font, make it big—sans-serif fonts can be hard to read. Never let your artistic sensibilities actually get in the way of getting your point across!) For our chart, we chose some old friends: Gothic for the titles, Swiss for the axis labels and the legend (longtime *MacAddict* readers may remember these fonts from our pre-2000 look).

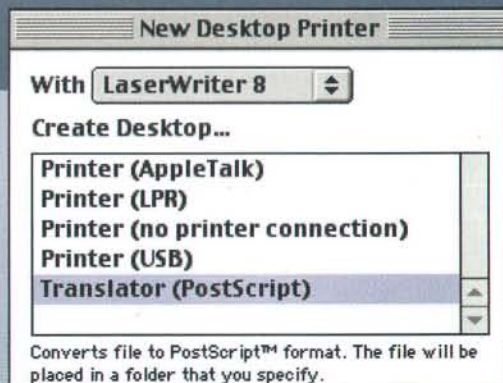


Ah, Swiss and Gothic—I remember the days...

Post Production

If you're an artist or designer, then Excel alone probably won't be adequate for your needs. Still, starting a chart in Excel is usually quite a bit easier than trying to build one from scratch in a full-fledged graphics program. Fortunately, there's a way to do a bit of finishing work on the chart before you send it off—you can move it into Photoshop or Illustrator.

When you start, it's not immediately obvious how to get the chart out of Excel with any real quality. The secret (like so many others) is hiding in your Apple Extras folder. Go into Apple LaserWriter Software, and run the Desktop Printer Utility. Create a Translator to Postscript. When you print out the file to that printer, you'll instead be printing to a Postscript file, which you can open in Photoshop or Illustrator. Now you can finish off your chart using a real graphics program, instead of being limited to Excel.



A Translator looks and acts much like a real printer, except that it creates PostScript files instead of physical prints.

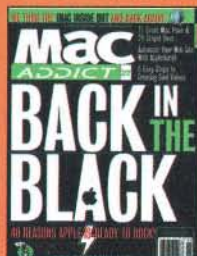
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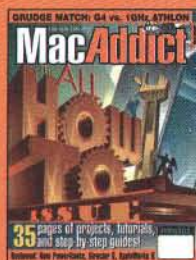
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7 The Color Scheme

Now it's finally time to choose a color scheme for your chart. The key here is to think about how you will reproduce your chart—lovely color gradients won't help your chart if you're planning to print it out on an old LaserJet, then fax it across the country.

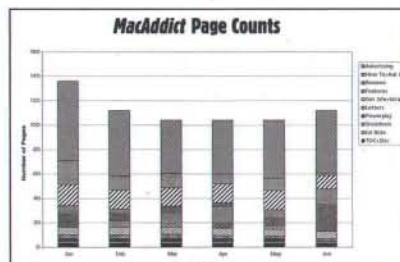
If your chart will end up in black and white, don't design it in color—you'll end up with a bunch of nearly identical grays. Instead, use patterns where you can—they're much more distinguishable than gray tones. Use a white background in black-and-white graphs; without hue differences, it's much too difficult to see a chart against a shaded background.

If, on the other hand, you're using color, use it wisely. Choosing colors is your best chance to draw attention to those parts of the graph you consider interesting (if you think the whole chart's pretty boring, a nice background image might cheer your audience up).

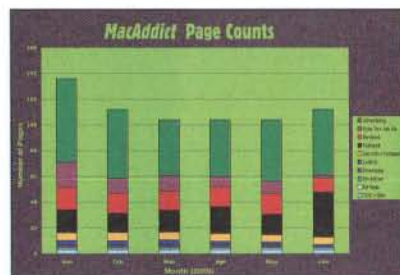
To set the color of a chart element, double-click the element, then click the Patterns tab. If you want a single-color background, select it; otherwise, click the Fill Effects button. This opens the Fill Effects dialog box, where you can choose a pattern, repeating texture, gradient, or picture as the fill element. If you use a picture, pick one that doesn't render the text unreadable—a vibrant, saturated picture may be pretty, but will make it almost impossible to see the axis labels.

That's it! You should now have a chart that shows your data in its best light.

Ian Sammis is running behind, as always. Would you believe he typed this bio in Quark on the day it was supposed to ship?



This design might look like a refugee from the mid-1980s, but if you're going to print in black and white, you should design in black and white.



With those fonts, we couldn't resist mixing green and purple for the final look of our chart. Remember, if your printer can't handle colors, a multihued chart will look like mud when it prints.

Stretching the Truth

Usually, people use charts to present data as accurately as possible. When things go bad, though, accurate charts can get a bit embarrassing. Fortunately, you can use some tricks to make your chart look a bit more palatable—and you're only failing to reveal the truth, not actually lying. Repeat that phrase to yourself in case you need it under oath.

Choose Your Axes Carefully

If you'd like a trend to look a bit more dramatic than it deserves to look, set the scale of the y-axis so the data starts right near the bottom of the chart and ends up near (or, better yet, slightly past) the top. This can make even the most trivial of upward trends look like a dramatic surge. On the other hand, sometimes trends are simply going in the wrong direction. In these cases, make the y-axis stretch over as big a range as you can plausibly use. The bigger the range of the y-axis, the less dramatic any trend will look—and "Profits are flat" sounds much, much better than "Profits are down."

Use Pie Charts to Avoid Revealing Trends

A pie chart has one serious benefit: It hides the total of the data you're graphing. If you're a pollster using your powers for evil instead of good, for example, a pie chart will very accurately show what fractions of your sample supported or opposed each of your poll questions without forcing you to admit that you only polled 12 people. If you plot repeated pie charts, you can use this trick to disguise negative overall trends (after all, you can plot six pie charts of sales without admitting that sales are down).

Use Area Charts to Focus on Favorable Results

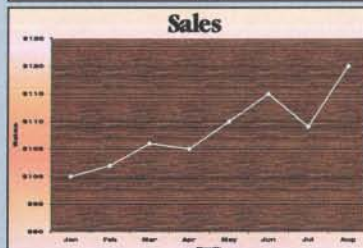
Area charts have an endearing property—the frontmost data set obscures everything plotted behind it. Used cleverly, an area chart lets you quietly hide the bad news by shoving it behind the good.



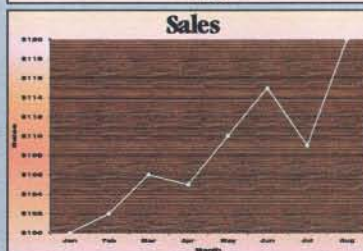
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...less depressing...



...or good news...



...great news. Best of all, you're not lying! Well, not exactly...

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Make Mac OS X Look and Act Like Mac OS 9

by David Reynolds



WHAT YOU'LL NEED

- Mac OS X Public Beta
- Sig Software's Classic Menu 2.0
- Sig Software's Drop Drawers



Find Sig Software's Classic Menu 2.0 and Drop Drawers X 1.2.6 on The Disc.

OK, all of you early-adopting Luddites out there who fear Mac OS X because it's...well, different from Mac OS 9—listen up. Have we got a deal for you! We can help you harness the power of Mac OS X without leaving behind all the comforts of the Mac OS 9 user interface. That's right, we'll teach you how to take a heavy hand with Mac OS X and *make* it behave like the classic Mac OS we've all grown to know and love. Best of all, this transformation requires almost no effort: It's mostly a matter of tweaking Mac OS X's preferences and running a bit of shareware.

If after reading our little tutorial you decide that Mac OS X needs to move further toward Mac OS 9 in form and function, tell Apple how you feel at www.apple.com/macosx. The company is listening to every bit of feedback, so it's in your best interest to hop on over there and tell Apple what you think in as much detail as possible. Do let Apple know about the good stuff, too. It's always nice to know what you're doing right.

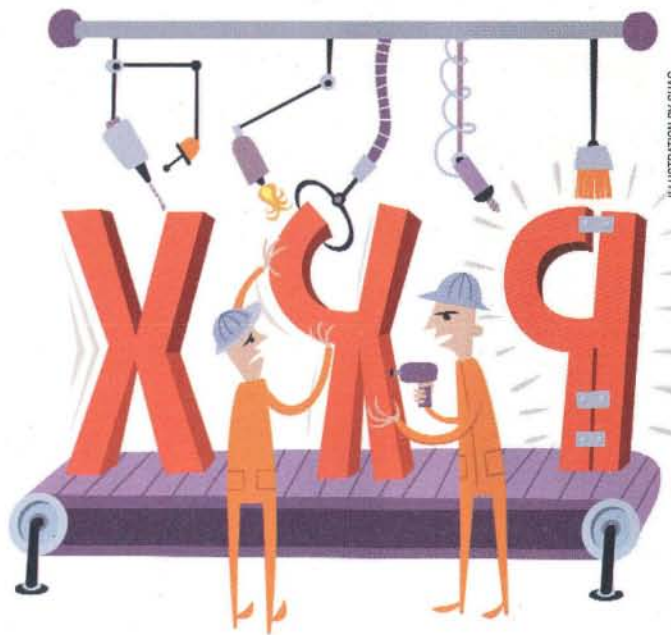


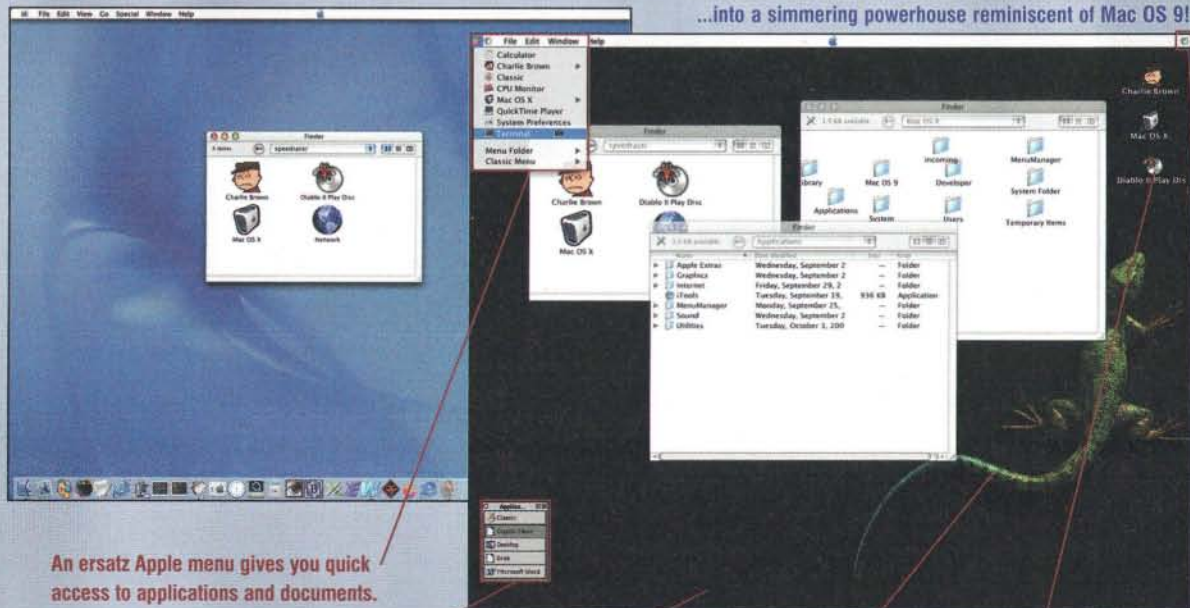
ILLUSTRATION BY SHAG

How We're Getting There

By making a lot of changes that, taken individually, seem trivial, you can go from a totally foreign OS X experience to one that strongly resembles OS 9. Here's how.

You can turn your basic Mac OS X desktop...

...into a simmering powerhouse reminiscent of Mac OS 9!



An ersatz Apple menu gives you quick access to applications and documents.

Our old friend: the floating Applications window from Mac OS 9.

What's not up? The Dock.

A custom desktop picture for those who prefer the finer things in life.

Icons on the desktop—it's the right thing to do.

A proper Application menu simplifies switching between processes.

1 Doing the Dock

First things first: The most obtrusive thing in Mac OS X is the Dock—it eats up a huge chunk of screen real estate. We can fix that by hiding the Dock until we need it. (We don't want to get rid of the Dock entirely, because it tries so hard to make itself essential by acting as the Application Switcher, Control Strip, and Apple Menu all in one.)

To make the Dock slide out of the way when you're not using it, open its preferences window by choosing Dock & Desktop Preferences from the Desktop menu, then clicking the Dock tab. Check the Auto Hide And Show box and close the window. Now the Dock gracefully disappears when it's not active. To make the Dock reappear, just move the cursor to the bottom of your screen. This is great when you're dealing with an application that puts the lower edges of its windows *under* the Dock, making them impossible to resize. No Dock, no problem.

2 Fixing Finder Windows

The higher-ups at Apple apparently don't like clutter, so Mac OS X displays the contents of an opened folder in the frontmost window, instead of creating a new window as Mac OS 9 does. This can be disconcerting for OS 9 users, who are accustomed to seeing each open folder or volume in its own window.

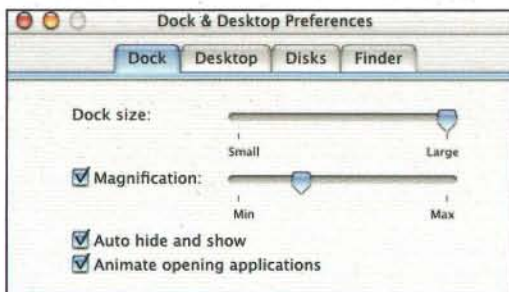
To make Mac OS X behave more like Mac OS 9, open the Finder's preferences window (by choosing Dock & Desktop from the Desktop menu, then clicking the Finder tab). Select the In A New Window radio button to make the Desktop application create a new Finder window when you double-click a folder.

3 Making a Familiar Desktop

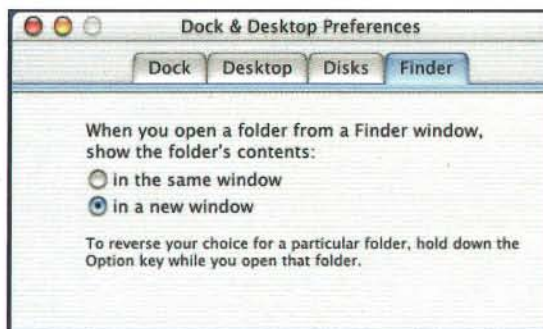
X is starting to look and act more like Mac OS 9, but we still have some serious work to do—namely, populating that barren desktop with some icons. First we'll put icons for our Mac's hard drives on the desktop. To do this, open a Mac OS X Finder window, navigate to the root level of the Mac, and drag onto the desktop any volumes you want to appear there. OS X will make an alias to each item—for most purposes, aliases under OS X act as hard drive icons do under OS 9.

We're only halfway done; we still need to get our CDs to show up on the desktop. To make *this* happen, choose Dock & Desktop Preferences from the Desktop menu (again), click the Disks tab, and check Show Removable Disks (For Example, CDs) On The Desktop. Close the window. Now, every time you insert a CD, it will appear on the desktop.

Since you're working on the desktop, you might want to replace the Aqua background with a more interesting view. Click the Desktop tab in the Dock & Desktop Preferences window, then choose a new picture by clicking the button in the lower-right corner (below the thumbnail of the current desktop image).



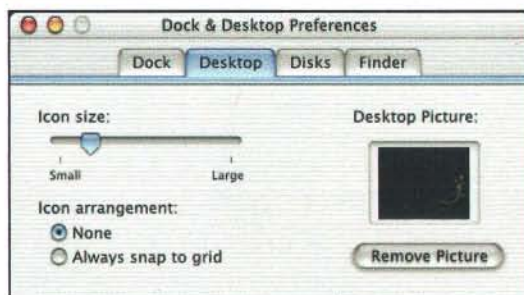
Select the Auto Hide And Show check box, and the Dock will move out of the way when you're not using it. If you don't want to lose the Dock entirely, you can opt to make it really teeny—that will have almost the same effect.



With the click of a radio button, you can cow Mac OS X into acting like Mac OS 9 when it comes to opening new Finder windows.



Check this box, and removable disks will show up on the desktop as they should.



By placing a new image (any old JPEG or TIFF will do) in the Desktop Picture portion of this preferences panel, you'll take one more step toward making Mac OS X your very own.

The Changing Face of OS X

This how-to will work for Mac OS X Public Beta, but we can't guarantee that things will be the same in the final version. Apple is very keen on hearing what you want to see changed in Mac OS X, so some of these issues may become irrelevant.

Another factor to keep an eye on is the rapid pace of shareware

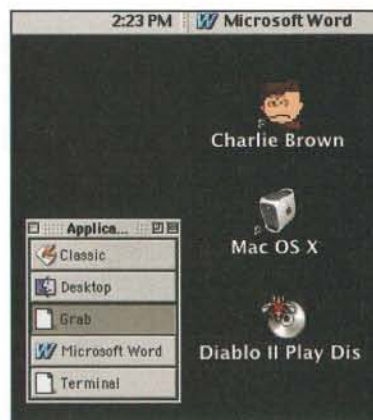
development around Mac OS X. By the time you read this, it's pretty likely that new user-interface enhancements for X will be out, so keep an eye on our MacAddict.com Super Site (www.macaddict.com/macosx) or on VersionTracker (www.versiontracker.com) for announcements of new titles.

4 Bringing Back the App Switcher

Mac OS X's Dock tries to do a lot of things at once (Apple intends it to replace the Apple Menu, Control Strip, Launcher, and Application Switcher menu), and—like a rubber band stretched around too large a bundle—it's wound too tightly to do anything terribly useful. You can remedy this, provided you set up your installation of Mac OS X to use the Classic compatibility environment.

To make the floating Application Switcher window appear, launch any Classic app. Once everything loads and that application moves to the front, pull down the App Switcher menu in the upper-right corner of the screen and tear off that menu. It will turn into a floating window that lists all of the apps running on Mac OS X, whether they're Classic, Carbon, or Cocoa. Although OS X applications will appear with generic document icons, the window works just as it would under Mac OS 9.

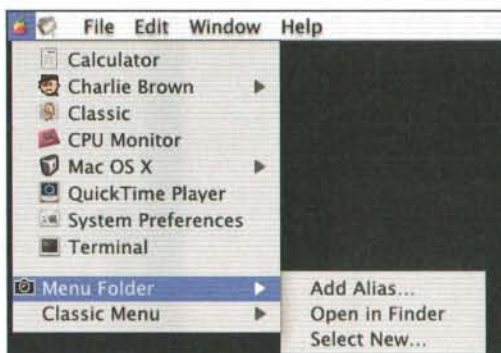
Remember this floating window from Mac OS 9? You can have it in Mac OS X, too.



5 Adding the Right Menus

As long as we're on the topic of the Dock's attempt to do too much, we have a way to bring back the old Apple menu, too. Sig Software (www.sigsoftware.com) offers a solution in the form of a Mac OS X–native shareware application called Classic Menu 2.0. This \$10 app creates an Apple menu (located at the far left of the menu bar) to which you can add your own items, building a custom version. It also creates an Application menu in the upper-right corner, which makes a nice alternative to using the Application Switcher window as in step 4—although the App Switcher and the Apple menu should work fine together.

To install Classic Menu, just copy the application to the directory where you want it to live, then launch it with a double-click. Classic Menu 2.0 (the most recent version as of press time) was written for Mac OS X Developer Preview 4, so it may have compatibility issues with the Public Beta (although we haven't experienced any problems).



Yeah, baby—a multihued Apple menu in Mac OS X, provided by Classic Menu 2.0. You can add aliases to your Apple menu that point to your most frequently used applications, volumes, and folders. (The little camera icon is a product of Grab, Mac OS X's screen capture program, not of Classic Menu 2.0.)

6 Pop-Up Windows Redux

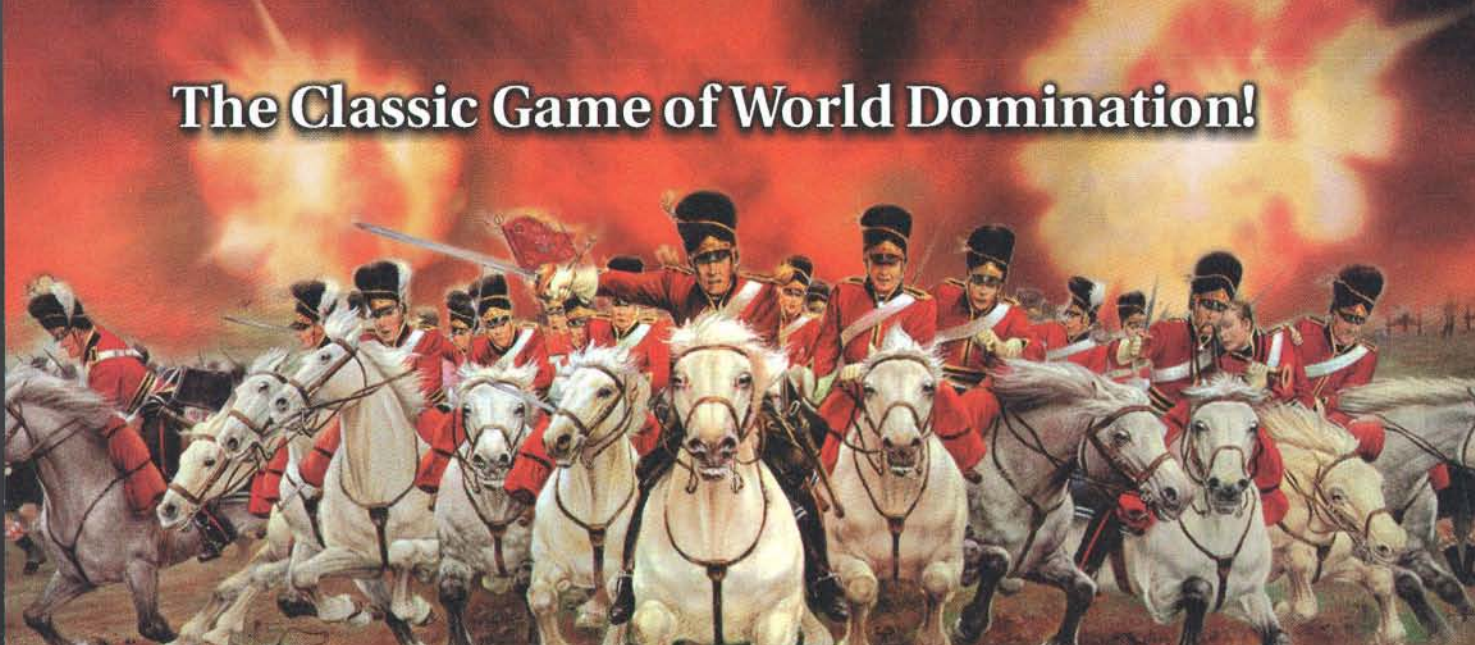
If you put folders into the Dock, they kinda, sorta regain some of the functionality pop-up windows once had—but there's a much better way. Sig Software's shareware program Drop Drawers lets you attach pop-up–style drawers to the edges of your screen. The drawers are quite a bit more versatile than the pop-up windows they replace—along with files, they can store text, graphics, URLs, and multimedia applications.



The drawers in Sig's Drop Drawers are like pop-up windows with superpowers.

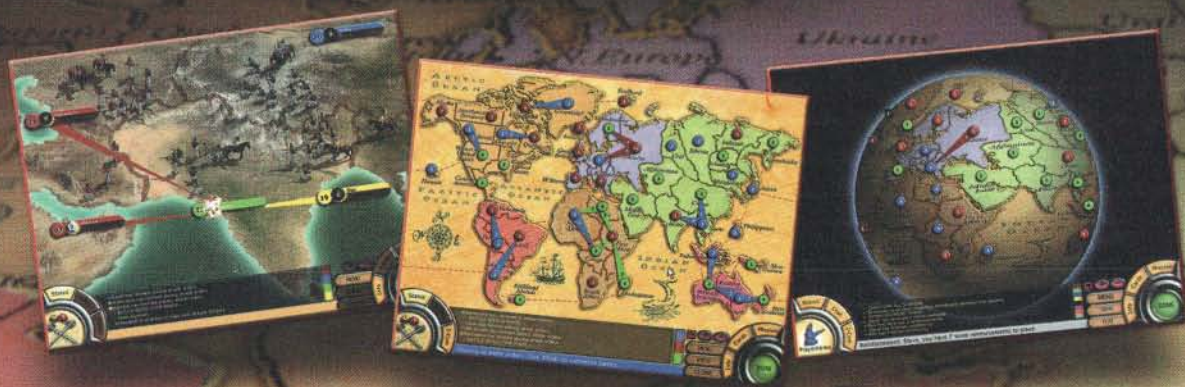
David Reynolds still can't believe how big 128-bit icons are, despite having been stepped on by one.

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Find
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Q I bought a new iMac, which is a wonderful replacement for my aging LC 575, but I have a problem I can't resolve. My computer freezes when I try to put it to sleep. Help me put my computer to sleep—I think it's tired!

A A sleeping Mac is a happy Mac, or at least that's how the old adage goes, isn't it? Wait, that isn't right....Anyway, the Mac's sleep function comes in handy when it works correctly. Instead of turning your Mac off, you can just put it to sleep—waking your Mac when you want to use it again is significantly quicker than the rigmarole of a full startup.

Unfortunately, the problem you are experiencing with your iMac is fairly common. The culprit is the USB bus. Due to the USB implementation Apple uses for iMacs, some third-party USB devices can cause sleeping disorders. Since USB hubs are a common element in these problems, you can often remedy this behavior by either changing USB hubs or connecting an offending device directly to your iMac. There is no good explanation for why some devices cause sleep problems and others don't. Try troubleshooting your USB devices: Unplug them all, then reattach them, starting with just the Apple mouse and keyboard and connecting other devices to your computer, one by one, until the problem returns.

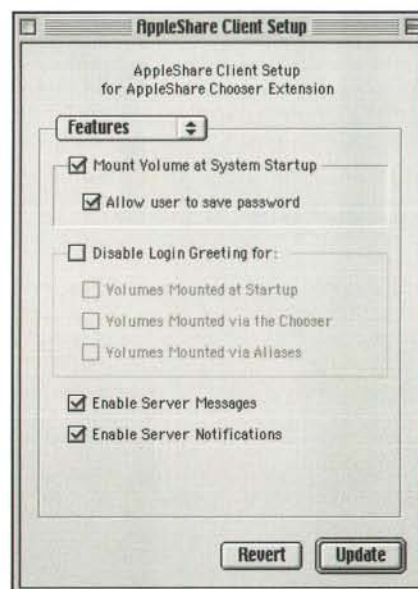
If your computer refuses to sleep with only the Apple mouse and keyboard attached, you probably have a software problem. The Apple Audio extension is a common suspect. If USB tinkering fails, try disabling this extension in the Extensions Manager control panel. Whether the root cause is software- or hardware-related, you should be able to identify it fairly easily.

Q We have a network of several Macs. When we start up our OS 9-based Macs, our Mac prompts us for a password

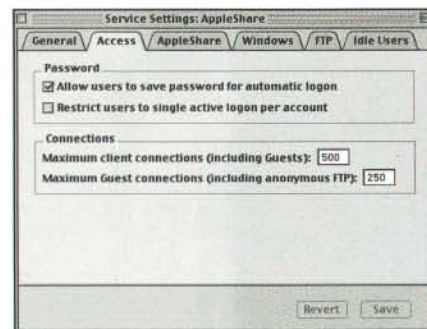
to connect to our AppleShare server. Our older Macs allow us to save the password, and the servers mount by themselves. We don't want to have to enter a password to connect to the server at startup. Are our days of automatically connecting to network drives over, or is there a solution?

A Your new computers rely on Apple's Keychain to save AppleShare passwords. This new technology enables you to save all your commonly called-upon passwords in one place and activate all of them simultaneously by typing a single password. When you unlock the Keychain at startup, the application allows you to access any password stored inside. You have to unlock the Keychain before the Save Password feature of the AppleShare extension will work.

If you want to get around typing your Keychain password, you can use software that allows your computer to unlock it automatically. One option is Keychain AutoUnlock (www.chaoticsoftware.com) and another is Keychain Unlocker (www.camation-software.com). Both of these free utilities enable your system to unlock the Keychain and access the passwords stored inside. As for your AppleShare server, make



Explore all the undocumented features of the AppleShare Chooser extension with the handy little AppleShare Client Setup utility.



Make sure your AppleShare server is configured correctly if you want to save passwords.

sure you've enabled password saving in the Mac OS Server Admin application.

Since we're talking about AppleShare and client interaction, we'd like to mention a wonderful little unsupported Apple utility called AppleShare Client Setup (<http://asui.info.apple.com/swupdates.nsf/artnum/n10119>). This free utility lets you configure the many hidden features of the AppleShare extension. You can also set lots of very cool options, such as AppleTalk timeout length and the size of the Finder's network read/write cache. It is a shame that the Mac's built-in network software doesn't include this wonderful tool, since the adjustable parameters really allow for some great fine-tuning. In the meantime, Mac network administrators should know of this unsupported Apple tool.

Q I had Apple install a DVD-RAM drive in my G3 when I ordered it. Adaptec came out with Toast DVD recently, and I want to create my own DVD-Video disks. Is this possible with a DVD-RAM drive, or do I need something else?

A Creating DVD-Videos that you can play on standard set-top DVD players is not as easy as you might think. DVD-Video technology—still in its infancy—is quite expensive. The players are becoming affordable, but the software and hardware technologies you need to create files haven't come down in price. To top it all off, DVD has lots of different competing standards.

Your DVD-RAM drive has little to do with DVD-Video discs. Think of DVD-RAM as a really big Zip disk that happens to use DVD

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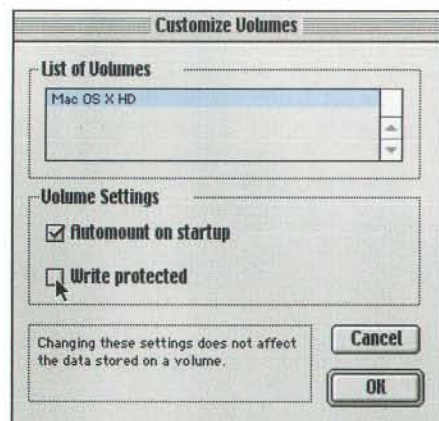
technology to store data. Though you can't use a DVD-RAM drive to actually *create* a DVD-Video disc with Adaptec's Toast DVD (www.adaptec.com), you can use it to *store* a DVD disc imaged created by Toast. You could then take the DVD-RAM disc, which contains the DVD-Video disc image, to a disk duplication service and have a functioning video disc made. But the cost of making a single DVD in this way can be prohibitive.

Currently, the only option for creating a DVD-Video disc at home is Pioneer's DVD-R disc recorder (www.pioneerusa.com). This SCSI device works well with Adaptec's Toast DVD software, but it costs over \$4,000. If you really need to create DVD-Video discs, however, it may be your only option. More DVD-Video creation hardware may be available soon.

Q For some reason the hard drive on my computer is locked! I don't know how it happened, but I can't unlock it. I know I could just reinitialize the drive, but I don't have a backup. Is there some way to unlock it?

A A locked hard drive usually results from installing or opening hard disk driver software or security software. In many cases, reinitializing the hard drive is the only solution. However, there's a good chance you can unlock the disc using Apple's Drive Setup hard disk driver software.

To give it a try, boot your computer to a System CD that has Drive Setup on it (most do). Launch Drive Setup, booting your Mac off the CD, then highlight the locked drive in the list of drives that appears. From the Functions menu, choose the Customize Volumes menu item. In the dialog box, uncheck the Write-Protect option to unlock the volume. In most (but not all) cases, this should do the trick.



Use Drive Setup to make sure your drive is not write-protected.

Q I was doing some cleanup in my System Folder, and I may have accidentally deleted a file that's rather crucial for my Internet connection. Whenever I try to connect to the Internet, I get an error that says "OTATalkServicesLib cannot be found," and my Mac can't connect. I looked in the Extensions Manager control panel and couldn't locate this item. What is this and where can I find it?

A One of my favorite aspects of the Mac OS is the way it names everything just as you would expect. In other words, it doesn't have any cryptically named files like those you find all over Windows. Unfortunately, you have run across one of the few instances where this is not true. Lib or library files contain code that adds functionality to your system. In other words, Lib files are extensions. This is where the naming inconsistency shows up: In most cases, these Lib files are not actually files at all, but pieces of code that live inside other extensions. So why don't the error messages say they can't find the *extension*?

If you get the "OTATalkServicesLib" error, in actuality your computer cannot find part of Open Transport. The OT in the error stands for

Open Transport, the technical name for Apple's network software. In your case, enabling all of the Open Transport extensions will probably clear the error. If not, a custom installation of Open Transport should fix the problem. The lesson here is that most Lib errors do not tell you the exact name of the missing file; they only give you a clue as to which extension or control panel your Mac may be missing.

Buz Zoller knows what he's talking about.

Resourcing

In the September 2000 issue, we explained how to create a custom startup screen for your computer. Due to an editorial error, the article recommended creating a PICT file instead of the necessary PICT Resource file. A standard PICT file (named StartupScreen and placed in the System Folder) will *not* work. What *will* work is a PICT Resource file. You can create this file with Photoshop or Graphic Converter, or by pasting your image into a new PICT Resource in an empty ResEdit document. We apologize for the confusion.

Supereasy Bootable CDs

1 Make a Read/Write disk image of the Software Install CD that came with your computer, using Disk Copy (<http://asu.info.apple.com/swupdates.nsf/artnum/n11162>).



2 Mount the image and add or delete any software you want, making sure to leave at least the System Folder. You might also want a copy of Norton Utilities or TechTool Pro.

3 Drag the mounted disk image into the Toast window. Make sure it's bootable—Toast 4 does this for you, while earlier versions require that you select the Make Bootable check box. You're done!



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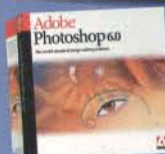
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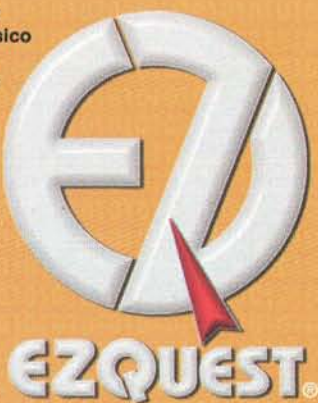
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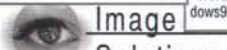
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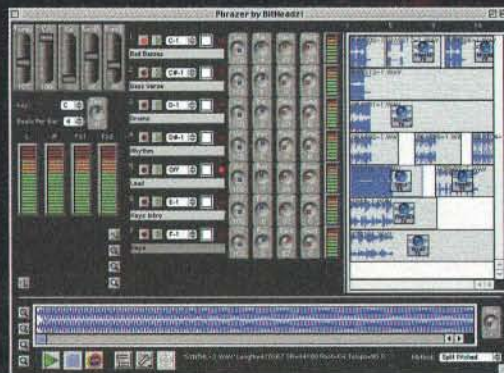
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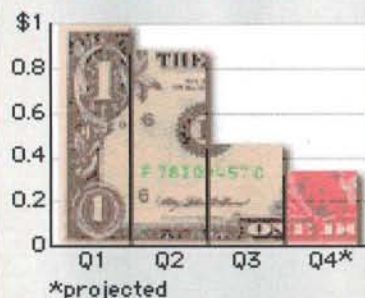
Who's up for a little millennial Microsoft bashing?

Falling Apples

When Apple's stock abruptly shed 50 percent of its value back in September, the reactions from the trade press were (typically enough) dramatically overblown and hysterically funny. Also, they generally missed Apple's stock split in June (in which the company traded each outstanding share for two or more shares), with the result that some news stories about Apple's stock price exaggerated the drop. Here are a few of the highlights.

WHAT HAPPENED IN JUNE AGAIN? c|net's News.com, in typical fashion, was one of the first off the mark with the story. In its haste to get the story out, though, the site managed to create one of the most misleading financial graphs we've ever seen (c|net, can you say *stock split*?).

Apple earnings per share in fiscal 2000



Oh my God! Apple's per-share value crashed in June! It's almost like each share was only worth half what it was in the first half of the year! Oh, wait—it was.

AAPL! (Shorting, or short-selling, is a way investors make money when a stock's value goes down—they buy it on one date and agree to sell it later at that day's closing price.) "It's a shocking preannouncement because it's so bad," says Jeff Matthews, president of Connecticut-based hedge fund Ram Partners, which, quite luckily, is short Apple," blares the *Street*. Boy, isn't he lucky now that a Web financial service has picked up his comments?

AS WHAT? "Apple isn't going to make anywhere near as much money this quarter..." begins the *Register's* (www.theregister.co.uk) article. Of course, not until paragraph four does the writer finally finish this statement: "[as] Apple and analysts were expecting."

UM, HANG ON...

Checking with analysts is fine—everyone does that before running a financial news story. But the *Street* went one step further, reporting on the comments of a hedge-fund manager who was actually *shorting*

News Stories We Thought We Read Somewhere...

Apple Rejects 0-Click Ordering

Cupertino—Despite having licensed 1-Click ordering from Amazon.com, Apple Computer has decided not to license Amazon's newly developed 0-Click technology, which enables products to arrive at the consumer's door without requiring that he or she order them in the first place.

"Although 1-Click licensing has worked well for us, we're stopping there," said one highly placed Apple official. "We thought about using 0-Click ordering to get rid of our unsold G4 Cube inventory, but then we realized doing so would just make matters worse."

Buy now with 1-Click



1-Click buying.
Now at the Apple Store.

Apple Computer chose to stick with the 1-Click ordering technology it licensed from Amazon.com.

Amazon.com officials could not be reached for comment, presumably because they were filing a patent on text-based communication.

He's So Hunky!

Hot on the heels of being voted teen hunk of the year, Bill Gates has started his own Web site (<http://microsoft.com/billgates>). Here you can read about his background, his interests, his speeches, and what he and his wife Melinda consider important. What's missing: a poll pitting Bill against 'N Sync heartthrob Justin.



Turn-ons: Multibillion-dollar, market-grabbing acquisitions; long walks on the beach.
Turn-offs: Probes by the Justice Department, third-world hunger.

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BY CHUCK DOWNS

Medicine For Your Mac



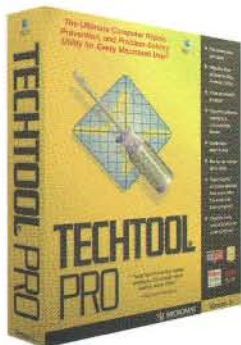
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